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# DEVELOPING A GLOBALIZATION COMPETENCE ASSESSMENT FRAMEWORK AND ITS APPLICATION TO FINNISH AND JAPANESE HIGHER EDUCATION

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The only real mistake is the one from which we learn nothing.

- John Powell

# ABSTRACT

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New requirements for graduates and professionals in the Information Systems (IS) field have emerged in today's globalizing world. An increasing amount of work is done in a distributed setting, and thus intercultural competence becomes a prerequisite for working with people from multiple cultural backgrounds. However, the current IS curriculum seems to be lacking studies preparing students for working in an international setting. Moreover, in order to truly determine students' competence, a culture of competence assessment must be created instead of assessing mere knowledge items.

This work aims at answering this need by proposing a globalization competence assessment framework for teachers in the IS field. *Globalization competence* herein is defined as a set of abilities required to perform successfully in an international environment particularly in the IS field. The framework matches globalization competences and suitable competence assessment methods based on competence complexities. Moreover, a focus is put to comparing the current methods for assessing globalization competence in Finland and Japan in the IS field in order to gain insights on future collaboration prospects.

A design science approach was chosen as the research method. The globalization competence assessment framework was constructed based on literature analyses on globalization competences and assessment methods from various fields. The current state of globalization competence assessment in Finland was analyzed through a review on past research, whereas an equivalent study on Japanese methods was conducted as expert interviews. The framework was demonstrated as a case study on a higher education course, and validated on the basis of student surveys and academic interviews.

The results of the case study supported the theoretical hypotheses of this work. Globalization competence assessment was seen as a vital issue to be included in IS teaching, and the proposed framework was considered a useful tool for the future. The framework can promote the culture of competence assessment and lifelong learning, act as decision support for teachers, and raise awareness on the need for globalization studies in the IS field. Furthermore, collaboration with Japanese institutions in the IS field appears promising. Iterative development of the framework is continued in future research.

Keywords: globalization competence, internationalization, competence assessment, competency, evaluation, assessment framework, IS curriculum

# TIIVISTELMÄ

Stén, Tiia
Viitekehyksen kehittäminen kansainvälistymiskompetenssin määrittämiseen ja sen soveltaminen suomalaiseen ja japanilaiseen korkeakouluopetukseen
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Nykyajan kansainvälistyvä maailma luo uusia vaatimuksia valmistuneille ja ammattilaisille tietojärjestelmätieteen (TJT) alalla. Monikulttuurisessa ja hajautetussa ympäristössä työskentelystä on tullut arkipäivää, joten tarvittava pätevyys kansainvälisessä ympäristössä työskentelyyn on edellytys. Tämänhetkinen TJT:n opetussuunnitelma ei kuitenkaan ota kansainvälistymisopetusta huomioon riittävässä määrin. Opiskelijoiden todenmukaisen pätevyyden määrittämiseksi on arvioitava varsinaista kompetenssia pelkän tiedon sijaan.

Tämän työn tarkoituksena on vastata edellä mainittuihin haasteisiin rakentamalla viitekehys opettajien käyttöön kansainvälistymiseen tarvittavien kompetenssien määrittämiseksi. Kansainvälistymiseen tarvittavalla kompetenssilla *(globalization competence)* viitataan joukkoon kykyjä, joita edellytetään menestyksekkääseen suoriutumiseen kansainvälisessä ympäristössä erityisesti TJT:n alalla. Viitekehys sovittaa yhteen kansainvälistymiskompetenssit ja niiden määrittämiseen sopivat menetelmät perustuen kompetenssien kompleksisuuteen. Lisäksi tutkimuksessa keskitytään kansainvälistymiskompetenssin määrittämiseen käytettyjen menetelmien vertailuun Suomen ja Japanin välillä tulevaisuuden yhteistyömahdollisuuksien selvittämiseksi.

Tutkimusmenetelmäksi valittiin suunnittelutieteellinen lähestymistapa. Viitekehys rakennettiin perustuen kirjallisuuskatsauksiin kansainvälistymiskompetenssista ja kompetenssin määritysmenetelmistä. Kansainvälistymiskompetenssin määrittämisen tämän hetken tila Suomessa analysoitiin kirjallisuuteen perustuen, kun taas Japanin tila selvitettiin asiantuntijahaastatteluilla. Viitekehystä testattiin tapaustutkimuksena yliopistokurssilla, ja sen validointi pohjautui opiskelijakyselyihin sekä akateemikkojen haastatteluihin.

Tapaustutkimuksen tulokset tukivat työn teoreettisia oletuksia. Kansainvälistymiskompetenssin määrittäminen nähtiin tärkeänä osana TJT:n opetusta, ja esitetty viitekehys koettiin hyödyllisenä työkaluna. Viitekehys pyrkii edistämään kompetenssin määrittämiskulttuuria ja tietoisuutta kansainvälistymisopetuksen tarpeesta, sekä tarjoamaan päätöksenteon tukea opettajille TJT:n alalla. Yhteistyömahdollisuudet Japanin korkeakoulujen kanssa vaikuttavat myös lupaavilta. Viitekehyksen iteratiivista kehittämistä jatketaan tulevaisuudessa.

Asiasanat: globalisaatio, kansainvälistyminen, kompetenssi, kansainvälinen pätevyys, kansainvälistymisen arviointi, tietojärjestelmätiede, tietojärjestelmätieteen opetussuunnitelma

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# 1 INTRODUCTION

The globalization phenomenon has been shaping the world during the past two decades. Increased global work relations have set new requirements and viewpoints for the society, thereby increasing the demand for interculturally competent graduates, academicians and professionals – "global citizens" (Deardorff, 2005; Paige & Goode, 2009; Spitzberg & Changnon, 2009). Intercultural competence becomes the main attribute for graduates aiming to work in an international environment (Krajewski, 2011; Spitzberg & Changnon, 2009) creating an emerging need for international academic education (Deans & Loch, 1998). *Intercultural competence* refers to appropriate and effective behavior and communication in an intercultural setting (Deardorff, 2004). Global issues have been introduced in other fields such as international business in business education, yet the development of globalization studies and global competence assessment is lagging behind in the IS as well as engineering domains of higher education (Deans & Loch, 1998; Grandin & Hedderich, 2009; Pawlowski & Holtkamp, 2012). The need for more globalization studies preparing students for the international world in the IS domain is evident.

Yet another issue hindering the development of the culture of assessing students' competence in higher education in the IS field is the focus on assessing knowledge items instead of competence. *Competence assessment* provides evaluation on the abilities, skills, knowledge, and performance of a student, and determines if the student has learned to apply his or her skills and knowledge in practice in a given context. The assessment process, rather than teaching, has a significant effect on students' learning, directly implying what is important on the study module (Boud & Falchikov, 2007). However, many courses of IT/IS test theoretical knowledge by simple "right or wrong" or multiple-choice questions, thereby making students acquire knowledge merely for grading and forgetting the whole learning process (Boud & Falchikov, 2007). Consequently, students tend to forget the theoretical knowledge trained for the exam and will not become competent in an equivalent situation in real life. Real problem solving situations must be created to be able to assess students' actual competence.

In recent years, interest for collaboration between Finland and Japan has intensified, and thus these countries are taken as the focus of this work. Despite the disparities in culture and communication, connecting factors between the countries can be detected in multiple areas (Karppinen, 2006). Collaboration in the business sector has been a particular interest of the contemporary era. A number of Finnish software firms have entered Japanese high-technology markets because of their sophisticated industry structure and large market size (Ojala, 2008). More connecting factors include the sense of aesthetics between Finnish and Japanese designers (Karppinen, 2006) and only recently the interest towards Finnish natural resources, such as berries, has emerged. The curiosity towards each other is mutual. Collaboration has been initiated in several areas, but not yet in the higher education of IS. This work aims at bridging the gap in higher education collaboration by comparing Finnish and Japanese assessment methods for assessing IS competences.

## 1.1 Background and prior research

As presented before, the IS field lacks a competence assessment culture of its own, and more study programs on internationalization issues are needed. No specific assessment methods exist for assessing the competence needed for operating in international environments in the IS field, and thus first determining the key competences required for internationalization is required. To answer this need, a set of such competences was introduced by Pawlowski & Holtkamp (2012) in their recent research. The internationalization competence framework includes seven categories of competences, and each category contains four competences with detailed descriptions. Consequently, I created an initial competence assessment framework for globalization competences one year earlier as part of my bachelor's thesis. *Globalization competence* herein are referred to as the skills and abilities required for operating in an international environment in the IS field. The framework matched the aforementioned internationalization competences and suitable competence assessment methods creating recommendations for applicable assessment methods for the IS field. Furthermore, a small-scale preliminary survey was conducted as an evaluation on the suitability of the recommended framework and on current assessment methods of six Finnish university courses (Stén, Pawlowski & Pirkkalainen, 2012). The results of the expert interviews showed that a generic framework for choosing assessment methods for specific learning outcomes in assessing globalization competence is in demand, yet further investigations and adjustments are required (Stén et al., 2012). The globalization competence assessment framework from my previous research is thus used as a foundation for this work.

## 1.2 Aim of the research

The main objective of this interdisciplinary research is to continue to iteratively develop the globalization competence assessment framework for the IS domain by pursuing the aforementioned research on globalization competence assessment. Furthermore, this work takes a first step toward bridging the gap in higher education collaboration by comparing Finnish and Japanese assessment methods for assessing globalization competence in the field. A point of interest is on the comparison of assessment practices in these countries. Without further ado, the main research question is:

*How to support higher education teachers in assessing globalization competence of students in the IS field in Finland and Japan?*

In order to answer the main research question, the following more specific research questions are formulated:

- How do context and timing affect the assessment?
- How combined competences (e.g. collaboration and intercultural) can be assessed?
- What is the current state of competence assessment in higher education courses in Finland and Japan?
- How to implement the change process for improving the course organization?

This work and the finished framework will act as starting points for creating a culture of competence assessment in the IS domain, while also raising awareness on alternative assessment methods and the need for globalization studies in the field. Most importantly, this research can forward the development of assessment culture in the IS field from assessing knowledge items to actual student competence, and further intensify collaboration between Finnish and Japanese institutions of higher education. FIGURE 1 shows a visualization of the aims of this work.

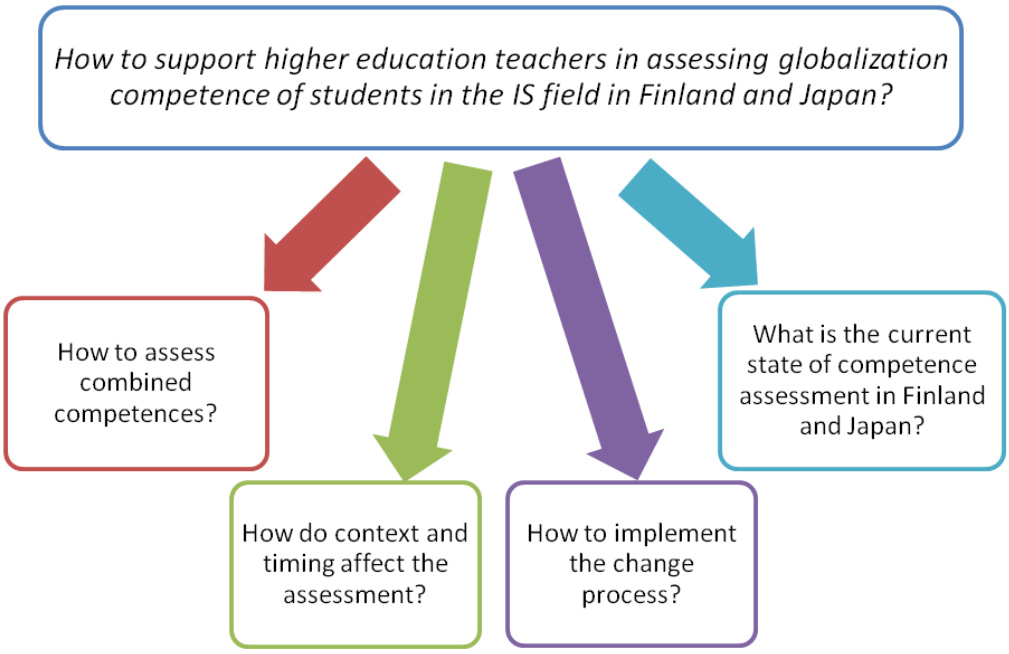


FIGURE 1 Visualization of the research questions

The challenge of this work lies in its multidisciplinary nature. Not much prior research has been conducted on the topic; hence there is a need for introducing and adapting theories from other fields of research as well. The scope of this work has been put to analyzing the factors that affect the assessment of globalization competence, and what needs to be taken into account when implementing a competence assessment scheme in the IS field. A special focus is on the comparison of assessment practices in Finland and Japan.

## 1.3 Research methodology

A design science research (DSR) approach (Hevner, March, Park & Ram, 2004; Peffers, Tuunanen, Rothenberger & Chatterjee, 2007) has been chosen as the core methodology of this work. It is a rigorous design approach which aims at creating new IT artifacts for solving identified organizational problems. The design science research process includes evaluation of the newly designed artifact, contributions to research by creating new knowledge, and communication of the results to all participating stakeholder groups. (Hevner et al., 2004.) Design science research should abide by the guidelines presented in TABLE 1:

TABLE 1 Design science research guidelines (Hevner et al., 2004, p. 83)

| Guideline | Description |
|---|---|
| 1. Design as an artifact | Design science research must produce a viable artifact in the form of a construct, a model, a method, or an instantiation. |
| 2. Problem relevance | The objective of design science research is to develop technology-based solutions to important and relevant business problems. |
| 3. Design evaluation | The utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods. |
| 4. Research contributions | Effective design science research must provide clear and verifiable contributions in the areas of the design artifact, design foundations, and/or design methodologies. |
| 5. Research rigor | Design science research relies upon the application of rigorous methods in both the construction and evaluation of the design artifact. |
| 6. Design as a search | The search for an effective artifact requires utilizing available process means to reach desired ends while satisfying laws in the problem environment. |
| 7. Communication of research | Design science research must be presented effectively both to technology-oriented as well as management-oriented audiences. |

Peffers et al. (2007) present a six-step DSR process model for conducting design science research (adaptation to this work is elaborated subsequently):

1. Problem identification & motivation
2. Objectives for a solution
3. Design & development
4. Demonstration
5. Evaluation
6. Communication

In order to understand, execute, and evaluate the design science research approach, an illustration of DSR adapted to this work is presented in the following. Next, the flow of this work is modeled according to the six-step DSR process and further elaborated on the basis of FIGURE 2.

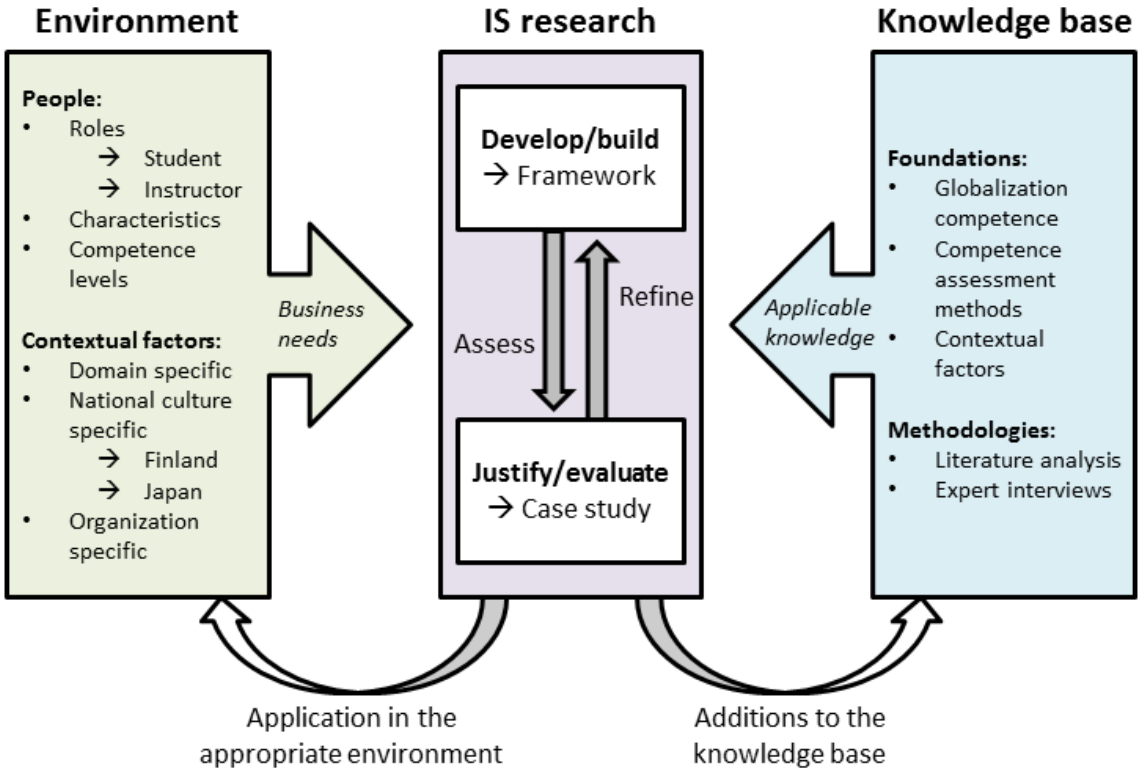


FIGURE 2 Illustration of the DSR approach in this work
(adapted from Hevner et al., 2004, p. 80)

**1. Problem identification and motivation**

As already described in the previous section, the IS field is in need of more study programs involving globalization issues. Past research has confirmed the need for internationalization of the IS curriculum (Deans & Loch, 1998; Pawlowski & Holtkamp, 2012) as the graduates of IS are not properly prepared for working in international contexts (Pawlowski & Holtkamp, 2012). Collaboration between Finland and Japan exists in areas such as business and design (Ojala, 2008; Karppinen, 2006), yet more cooperation could be initiated in the IS higher education. A change in the assessment culture is needed to be able to accurately assess and evaluate the desired competences instead of knowledge items. In order to realize the change in curriculum and assessment culture, the current state of globalization competence assessment in the IS field requires attention.

**2. Objectives for a solution**

The main objective of this research is to construct a globalization competence assessment framework for supporting higher education teachers of IS in choosing the best assessment methods for assessing different types of globalization competences. The framework will act as the first step towards developing a competence assessment culture in the IS field. Contextual factors (FIGURE 2: Environment), timing of the assessment, and what needs to be taken into account when assessing combined competences are studied in order to construct

the framework. Furthermore, the current state of globalization competence assessment in the IS domain in Finland and Japan is investigated so as to fit the framework for multiple contexts and to deepen the collaboration between the two key countries in the field.

**3. Design and development**

The framework is developed (FIGURE 2: IS research) on the basis of the theoretical foundation (FIGURE 2: Knowledge base) extracted from existing literature, including globalization competence, competence assessment methods, and contextual factors affecting them. Reviews on past research in addition to expert interviews will be conducted to determine the current state of globalization competence assessment in the IS field in both Finland and Japan. The globalization competence assessment framework will be then constructed based on the above-mentioned as a design science research (DSR).

**4. Demonstration**

A demonstration of the framework is implemented as a case study in a real life scenario on a Finnish higher education course of IS (FIGURE 2: Environment) to be able to further address refinement needs (FIGURE 2: IS research). The case study is presented in chapter six. Due to time limitations, the framework is tested only on a Finnish course in this work, and thus its demonstration in a Japanese environment is left for future research.

**5. Evaluation**

Evaluation of the framework will be conducted as a case study on a higher education course of IS (FIGURE 2: IS research) in order to validate the framework. The case study consists two phases. In the first phase, surveys are administered to students before and after the course in order to compare self-evaluated competence development and discover the student point of view on the course assessment method. In the second phase, the instructor of the course and a selected group of external IS academics are interviewed to find out the academic point of view on the usefulness, usability and future prospects of the framework. The case study is introduced in chapter six.

**6. Communication**

The results of this research will published as open access in electronic form and will be suitable for future research on globalization competence and its assessment in the IS field (FIGURE 2: Additions to the knowledge base). The results are mainly aimed at academics of IS, both researchers studying the internationalization of curriculum, as well as instructors teaching globalization courses. The knowledge of this research can also benefit managerial audiences aspiring to globalize their business and identify competence gaps in the IS field.

## 1.4 Structure of the thesis

The purpose of the introduction chapter was to lay the foundation for the rest of the thesis by introducing the backgrounds and past research, set the objectives and goals for the research, disclose the research questions, and present the used methodology and the structure of the thesis. Next, the concept of globalization competence is presented in chapter two. First, the conceptual background of the term is clarified, which is followed by the definition for globalization competence chosen for this work. Then a discussion on the contextual factors affecting globalization competence assessment and its conceptualization is presented. The chapter is summarized in the final section.

The third chapter introduces competence assessment. The chapter commences by explaining the relation of competence assessment to overall learning process. What is meant by competence assessment and its definition chosen to be used in this work are introduced in the next section, in addition to a discussion on the timing of the assessment. Several assessment methods and types are introduced, followed by a review on how to choose a suitable competence assessment method. The current methods used for assessing globalization competence in Finnish IS courses are presented in the subsequent section as a review on my past empirical research. The chapter is summarized in the last section. Consequently, chapter three ends the literature review part of this thesis.

The current methods used for assessing globalization competences in Japan are analyzed in chapter four. This chapter begins the empirical part of this work. First the research method, sampling, and collection and analysis of data are presented. Thereafter the results of the empirical study conducted in this work on the current state of globalization competence assessment and assessment methods in Japan are given and analyzed.

Finally, the globalization competence assessment framework is constructed in chapter five. The constructive design and development part of the thesis commences from here on. First the discussion is targeted at the assessment of combined competences and what needs to be taken into account in their assessment. The revised globalization competence assessment framework is presented and explained subsequently. In the last section a model for the assessment change process is proposed, i.e. how to utilize the framework in practice.

The framework is demonstrated and evaluated through a case study method. Chapter six presents the case study for testing and validating the constructed framework on a university course of IS. Results of the case study are presented and analyzed in chapter seven. Discussion on the case study results in relation to the hypotheses presented in the literature part of this work is initiated in chapter eight. The thesis is concluded in chapter nine alongside with future research aspects.

# 2 GLOBALIZATION COMPETENCE

Intercultural interaction skills, multilingual expertise and international experience are deemed essential for graduates, academics and professionals working in today's global world. A good example of the importance of globalization competence emerges in a study conducted in a Japanese company. If an expatriate employee had possessed the necessary intercultural communication skills, the company would have not lost 98% of the market share to their competitor (Tung, 1987). Moreover, as the internet has become a part of the majority's everyday life, there is increasingly less chance for staying out of the globalizing society. The abilities to communicate and relate with diverse cultural and ethnic backgrounds can no longer be considered as less important topics in education (Krajewski, 2011; Spitzberg & Changnon, 2009).

The purpose of this chapter is to present the basic concepts of this work as a foundation for later chapters. A conceptual clarification for assessing globalization competences in the IS domain is given as background information. The definition of globalization competence used in this work is presented together with a discussion on the contextual factors that can affect the understanding of globalization competence. The chapter is concluded in the final section.

## 2.1 Conceptual background

In order to understand the term globalization competence, it is important to understand the related sub-terms – globalization and competence. This section shows the distinctions between the terms globalization and internationalization, and competence and competency.

### 2.1.1 Globalization vs. internationalization

The terms globalization and internationalization are often confused with each other (Knight, 2004). Both are related to international issues, but contain a dif-

ferent perspective. This subsection classifies these two terms, and explains why the term globalization was chosen to be used in this research.

*Globalization* has several different meanings across scientific fields. On one hand, it can be understood as the unification of national economies across the world with the purpose of increasing outcomes by dividing labor to different countries to reduce tariffs and export fees (Bhagwati, 2007). On the other hand, a more universal definition by Croucher (2004, 8) states that globalization is "a cluster of related changes occurring in, but not limited to, economic, technological, cultural and political realms that are increasing the interconnectedness of the world." The process of globalization can hereby be understood as interdisciplinary changes in societies, individuals, international relations, and humankind in tandem with shifts in their internecine relations (Robertson, 1992). Sometimes globalization is also confused with similar terms such as internationalization, localization, nationalization or regionalization. However, unlike the other above-mentioned terms, globalization lacks a specific spatial aspect, thus making the scene of action of globalization the whole world. Keeping that in mind, Held, McGrew, Goldblatt & Perraton (2000) define globalization as

> a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions […] generating transcontinental or interregional flows and networks of activity, interaction, and the exercise of power. (Held et al., 2000, p. 68)

Similar to globalization, the definition for *internationalization* varies across environments and domains. Commonly, internationalization is understood as a process of increasing involvement of enterprises in international operations in the field of business and economics (Welch & Luostarinen, 1988). In general, internationalization could be explained as the increase of international operations in several different environments. However, many of the current definitions of internationalization concentrate merely on a specific field, making a universal definition difficult to construct. In this work, the most adequate definition was chosen from the field of education:

> Internationalization at the national/sector/institutional levels is defined as the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education. (Knight, 2004, p. 11)

In conclusion, globalization is the big picture wherein internationalization considers the individual processes of integrating an international aspect into a function. Literally speaking, *inter-national* particularly denotes actions between nations while globalization is a broader definition involving players from multiple sectors. Knight (2004, 5) poses a valid argument by saying that "internationalization is changing the world of higher education, and globalization is changing the world of internationalization." Thus, the term globalization is chosen to be used as the definition of globalization competence in this work, as it refers to the shift of environments. Globalization competence is a collection of

skills and abilities required from a graduate to work successfully in a continuously changing international environment, particularly in the IS field.

### 2.1.2 Competence vs. competency

The terms competence, competency and learning outcome are frequently confused with each other as scholars across fields use them in a mixed manner. This subsection sheds light on the general confusion between the terms and gives reasons why the term competence was chosen to be used in this work. Furthermore, other closely related terms, such as knowledge, skills and abilities, are taken into the discussion in order to illuminate the relations of the concepts.

Competence and competency are confused most commonly with each other. The terms have been used in an interchangeable manner across domains, countries, and times, but yet no universally accepted segregation and definitions have been achieved (Grant & Young, 2010; Trotter & Ellison, 2001). In particular, the most problematic issue is the fact that the concepts are often understood differently in different countries. The term *competence* is mostly used in the UK, whereas *competency* has mostly been affected by American influence (Trotter & Ellison, 2001). Despite the general confusion between the concepts, Trotter and Ellison (2001, 36) offer a generalized segregation between the two: "Competence is the ability to do a particular task, while competency concerns the underlying characteristics which allow a person to perform well in a variety of situations." In other words, competence is the output required for the specified minimum standards, while competencies comprise the inputs an individual brings to a job resulting in superior performance (Trotter & Ellison, 2001).

*The European Qualifications Framework* (EQF) defines competence as

> the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. (European Communities, 2008, p. 11)

Herein we encounter yet more terms: knowledge, skill and ability. To be precise, the aforementioned concepts are included in the definition of competence. *Knowledge* (theoretical and/or factual) encompasses the facts, principles, theories or practices that are acquired through learning (European Communities, 2008). On the other hand, s*kills* are the abilities to apply cognitive (using logical, intuitive and creative thinking) and practical (utilizing manual dexterity in addition to methods, materials, tools and instruments) knowledge in a situation in order to complete tasks and solve problems (European Communities, 2008). *Ability* simply refers to the possession of the means to accomplish certain tasks (Oxford Dictionaries, 2010a), in comparison to one more term; *capability*, which similarly refers to the ability or power to do something, but is more often used to describe organizations or resources instead of individuals (Oxford Dictionaries, 2010b). However, according to the EQF definition, *competence utilizes rather than encompasses* knowledge and skill instead of being part of the construction of competence like in more common definitions (Grant & Young, 2010). Therefore,

competence is not merely knowing, having skills or abilities, but instead holding the ability to perform the appropriate action according to the situation with the possessed knowledge, skill or ability. FIGURE 3 shows an illustration of the trajectory of competence and the relations between the discussed concepts.

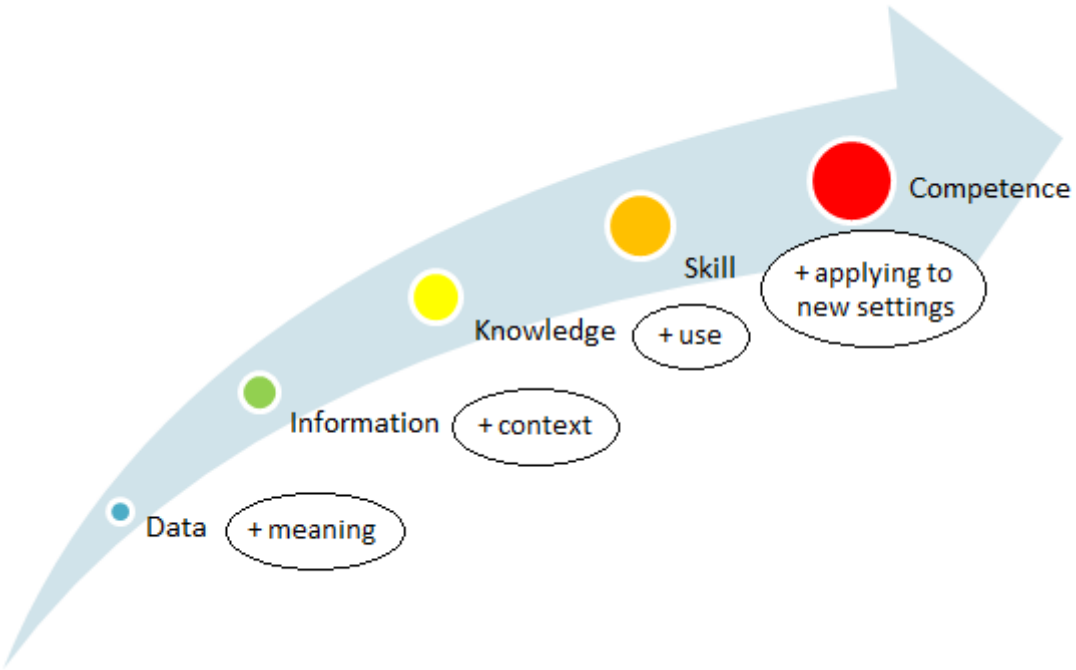


FIGURE 3 Trajectory of competence (adapted from North & Gueldenberg, 2011, p. 16)

Finally, the relation of a learning outcome to competence and competencies is discussed. Typically, in higher education, learning outcomes have been used to delineate the objectives of study modules, and more specifically, what the learner should be able to do on completion of the module. In order to follow the aspirations of lifelong learning of the EQF and be able to compare and cooperate more closely between countries and institutions in Europe, common terminology should be accepted, as the education practices and training systems are clearly diverse across countries (European Communities, 2008). Instead of focusing on the inputs of learning, such as length of study, the EQF emphasizes the results. Therefore, a unified definition of a learning outcome is introduced:

> "Learning outcomes" mean statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence. (European Communities, 2008, p. 11)

In the EQF, *learning outcomes* are specified in three categories; knowledge, skills and competence. This enables different combinations of qualifications capturing a wide scope of diverse learning outcomes from theoretical knowledge to practical skills, as well as social competences. (European Communities, 2008.) However, this work does not take further notice of the learning outcomes categorization of EQF. The concept of learning outcome is used as a basis for past research on globalization competences in the Information System field by Pawlowski &

Holtkamp (2012). Their research discussed that, once applied to a specific problem in a certain context, learning outcomes can be identified with competences (Pawlowski & Holtkamp, 2012). Consequently, following the style of past research, a deduction is now made defining competence as

> a collection of skills, abilities, and attitudes to solve a problem in a given context. (Pawlowski & Holtkamp, 2012, p. 2)

To sum up, all of the terms competence, competency and learning outcome describe the power of an individual to perform a task utilizing his or her skills, abilities and knowledge. The distinction between the terms competence and competency is yet unresolved between countries and domains. However, generalized definitions for the terms were presented to clarify the concepts in this work. Competence was chosen to be used in this work in order to stay aligned with the terminology of past research on globalization competence.

## 2.2 Definition of globalization competence

A myriad of definitions and conceptualizations across domains has been presented for over five decades in order to explain the competence required for operating in an international environment (Spitzberg & Changnon, 2009). Various terms have been used to describe the same theme across disciplines; intercultural (communication) competence (Arasaratnam, 2006; Deardorff, 2006; Spitzberg, 2011; Spitzberg & Changnon, 2009; Ting-Toomey, 1999), cross-cultural competence (Johnson, Lenartowicz & Apud, 2006; Leiba-O'Sullivan, 1999), global competence (Grandin & Hedderich, 2009; Hunter, White & Godbey, 2006; Jokinen, 2005; Olson & Kroeger, 2001) and internationalization competence (Pawlowski & Holtkamp, 2012). The terms seem similar in addressing the competence needed for an international context, albeit differences remain in their definitions, emphases and contextual requirements. This section attempts to shed light on this confusion by presenting some definitions as background information, and concludes with a description of what is meant by globalization competence in this work. There are probably as many alternative conceptualizations for the competence required for operating in an international environment as there are scholars presenting them. However, certain commonalities can be observed in most of the numerous definitions. Spitzberg and Cupach (1984) argued that an interpersonal competence model should include at least five components:

- Motivation
- Knowledge
- Skills
- Context
- Outcomes

Developmental models emphasize the integration of time dimension of relationships, whereas relational models include all the relationships and interaction processes involved in their competence models. There are numerous models theorizing intercultural competence, its components, development, relations (interaction), adaptation, and so forth. (Spitzberg & Changnon, 2009.) What's more, the terms *intercultural competence* and *intercultural communication competence* are frequently used in an interchangeable manner in literature, making the distinction between the two difficult to make. However, due to the aims of this work, only intercultural competence is taken into more detailed scrutiny. The emphasis of this section is on showing what concepts of intercultural competence there are and what constitutes them. The term intercultural competence is herein used as a generalized concept in the pursuit of explaining what globalization competence is.

Deardorff (2006) from the field of international education is among the few scholars who have used actual expert interviews to determine the most important components which constitute intercultural competence. Her pyramid-like process-model of intercultural competence (FIGURE 4) is thus chosen to be used in this work, giving a solid foundation for conceptualizing globalization competence.

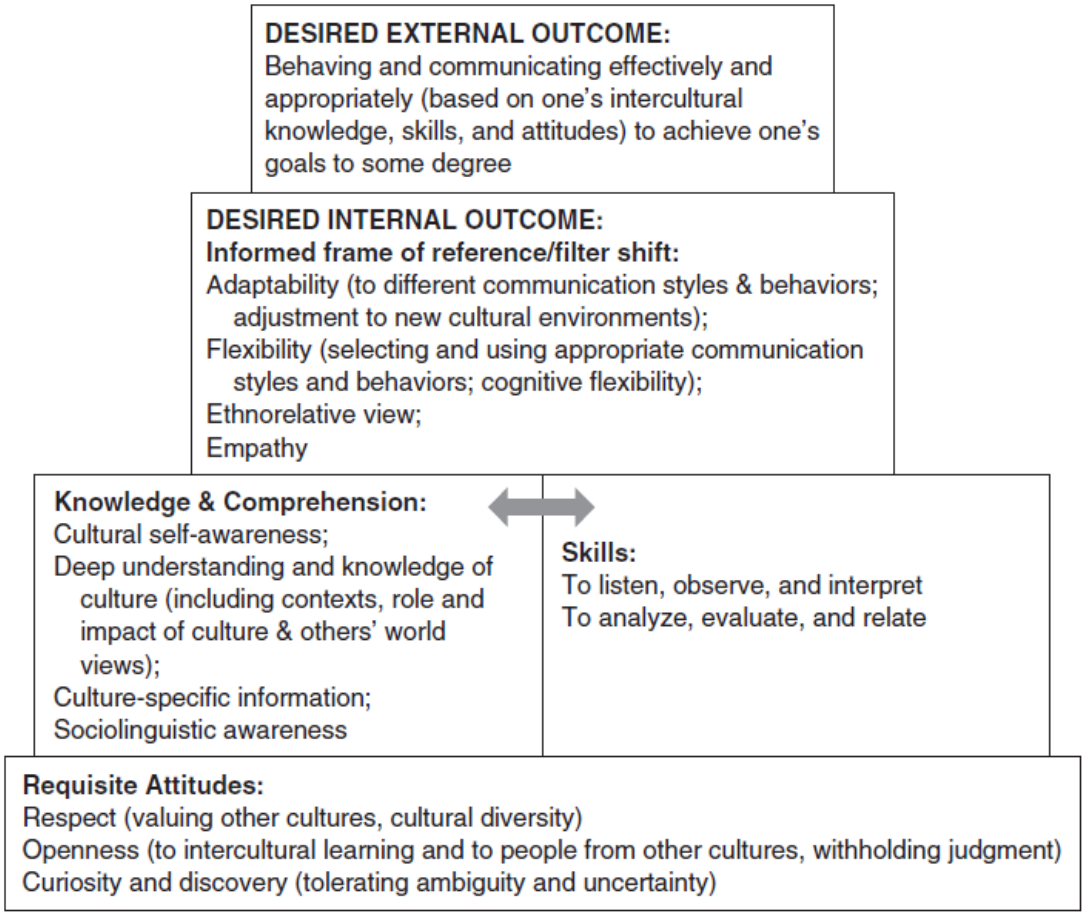


FIGURE 4 Pyramid model of intercultural competence (Deardorff, 2006, p. 254)

The lower levels are considered the base of the pyramid, enhancing the higher levels. The pyramid is based on an individual's attitudes (respect, openness, and curiosity and discovery), moves to the acknowledgement of one's personal attributes (knowledge and comprehension, and skills), and finally advances to the interactive cultural level where outcomes are produced. Being aware of the learning process at each stage is the key for acquiring intercultural competence. Moreover, the degree of intercultural competence gained depends on the assimilated degree of the underlying elements, hence the pyramid shape of the model. (Deardorff, 2006.) The desired external outcome of what intercultural competence means can be summarized as

> behaving and communicating appropriately and effectively in intercultural situations. (Deardorff, 2004, p. 194)

The term *cross-cultural competence*, in turn, seems to be mostly used in international business education (Johnson, Lenartowicz & Apud, 2006; Leiba-O'Sullivan, 1999). The following definition focuses on the process of cross-cultural adaptation as an outcome and serves as a good example of a definition for cross-cultural competence in regard to this work:

> Cross-cultural competence in international business is an individual's effectiveness in drawing upon a set of knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad. (Johnson et al., 2006, p. 530)

*Global competence* is yet another term describing one's effectiveness in an international context in the domain of international education as well as engineering. Olson & Kroeger (2001, 117) describe a globally competent individual as someone possessing "enough substantive knowledge, perceptual understanding, and intercultural communication skills to effectively interact in our globally interdependent world." Global competence is proposed as an umbrella term to describe the human ability to interact effectively across national borders (Olson & Kroeger, 2001). Nevertheless, no universally accepted definition exists for global competence as of yet. Another definition by Hunter et al. (2006) describes global competence similarly:

> Having an open mind while actively seeking to understand cultural norms and expectations of others, leveraging this gained knowledge to interact, communicate and work effectively outside one's environment. (Hunter et al., 2006, p. 270)

Finally, in the IS field Pawlowski & Holtkamp (2012) introduced an initial set of *internationalization competences* for improving the globalization focus of the IS curriculum. Competences were divided into seven categories portraying the abilities required for graduates of IS to perform effectively in a global environment. Internationalization competences include intercultural, communication, business and technical (IS-specific) competences. (Pawlowski & Holtkamp,

2012.) The seven categories of internationalization competences are as follows (Pawlowski & Holtkamp, 2012, p. 4):

- **Generic competences** which include unchanged and generic competences from different categories but focus mainly on domain-specific competences.
- **IS *(Information Systems)* competences** focusing on domain-specific IS competences adapted for the international context.
- **ICT *(Information and Communication Technology)* competences** ranging from basic computer skills and skills to operate different programs to more complex knowledge about IT architectures, security, and management.
- **Project management and leadership competences**, which could also be referred to as Coordination competences, covering areas such as basic business competences, team management, and work distribution.
- **Collaboration and knowledge management competences** including knowledge sharing and transfer as well as work attitudes in an international team.
- **Communication competences** which focus strictly on the exchange of messages and information in verbal and written form including choice of communication style and management of communication.
- **Intercultural competences** including cultural awareness and understanding of cultural differences.

Competences can influence one another, for example communication behavior can change in order to adapt effectively into an international context. Moreover, the authors state that the relations between Generic and IS competences, and Intercultural competences have proved to be unclear, and have not been studied further. (Pawlowski & Holtkamp, 2012.)

As we are coming closer to the core concept of this work, globalization competence, a short summary of the aforementioned concepts is in place. A selected few of similar concepts were presented; intercultural competence, cross-cultural competence, global competence and internationalization competences. The concepts, their authors and components are summarized in TABLE 2:

TABLE 2 Summary of concepts related to globalization competence

| Author(s) | Concept | Components |
|---|---|---|
| Deardorff, 2004, 2006 (International education) | Intercultural competence | • Requisite attitudes<br>  ○ Respect, openness and curiosity<br>• Knowledge & comprehension |

(continued)

| | | |
|---|---|---|
| TABLE 2 (continued) | | • Cultural self-awareness, understanding and knowledge of culture, culture-specific information and sociolinguistic awareness<br>• Skills to listen, observe, interpret, analyze, evaluate and relate<br>• Informed frame of reference shift<br>  o Adaptability, flexibility, ethnorelative view and empathy |
| Johnson et al., 2006 (International business) | Cross-cultural competence | • Personal attributes<br>  o Values, beliefs, norms, personality traits such as flexibility, perseverance, self-efficacy, etc.<br>• Personal skills<br>  o Abilities and aptitudes<br>• Cultural knowledge<br>  o Generic and specific<br>• Institutional ethnocentrism<br>• Cultural distance |
| Olson & Kroeger, 2001 (Engineering) | Global competence | • Substantive knowledge of cultures, languages, world issues, global dynamics and human choices<br>• Perceptual understanding<br>  o Open-mindedness, resistance to stereotyping, complexity of thinking and recognition that one's worldview is not a universal perspective<br>• Intercultural communication<br>  o Skills used to effectively engage with others including adaptability, empathy, cross-cultural awareness, intercultural relations, and cultural mediation |
| Pawlowski & Holtkamp, 2012 (Information systems) | International-ization competences | • ICT competences<br>• Project management and leadership competences<br>• Collaboration and knowledge management competences<br>• Communication competences<br>• Culture competences |

Intercultural competence, cross-cultural competence and global competence base their definitions on motivation and positive attitudes to learn about new cultures, some knowledge and skills on intercultural issues and interaction, and appropriate and effective behavior in an intercultural context as the outcome. It is important to acknowledge the similarities in the terminology, but also equally essential is to discern the differences between the domains. The pyramid-model of Deardorff (FIGURE 4) from international education is an excellent example of presenting the components and how they add up to increase the degree of intercultural competence. However, definitions from the fields of international business and engineering seem to emphasize the achievement of effective work

performance of an individual in an international context as the outcome, instead of mere change in behavior like in the humanities.

Internationalization competences are the most dissimilar from the group of concepts presented in TABLE 2. On the contrary, internationalization competences from the IS field cover areas of ICT, project management and leadership, collaboration and knowledge management, and competences required in intercultural communication contexts. Internationalization competences are presented in the following TABLE 3:

TABLE 3 Internationalization competences (Pawlowski & Holtkamp, 2012, p. 7-8)

| **Category** | **Competence description** |
|---|---|
| ICT | 1. Ability to align ICT with the business requirements<br>2. Understanding of importance and limitations of different information sources<br>3. Ability to find quality information with the help of ICT<br>4. Ability to identify problems with ICT |
| Project management and leadership | 1. Ability to manage own work<br>2. Ability to use other people's expertise and knowledge<br>3. Ability to take responsibility<br>4. Ability to make decisions |
| Collaboration and knowledge management | 1. Ability to build national and international relationships and networks on a professional level<br>2. Ability to share information and knowledge with the team<br>3. Ability to collaborative problem resolution<br>4. Ability to understand other people's perspectives, needs and values |
| Communication | 1. Ability to communicate sensitively taking into account other personalities and cultures<br>2. Ability to listen to others and consider their thoughts<br>3. Ability to communicate clearly and articulately<br>4. Ability to focus on key points during communication |
| Culture | 1. Foreign language skills (e.g. English)<br>2. Understanding the influences and implications culture has in work life<br>3. Ability to adjust to different cultures<br>4. Ability to evaluate perspectives, practices and products from multiple cultural perspectives |

Internationalization competence includes also ICT and business related competences, whereas the other aforementioned concepts explain merely the intercultural part. Effective performance in a global context in the IS field requires all of the components of internationalization competence, which is thereby chosen to be used as the conceptual foundation for assessing globalization competence in this work. As a conclusion, *globalization competence* is defined as a set of skills, abilities and attitudes of such functional areas as ICT, project management and leadership, collaboration and knowledge management, communication and

culture. Institutions of higher education who integrate globalization competence education and assessment in their curricula will produce graduates who are able to solve problems and perform effectively in an international context in the IS domain based on the accumulated knowledge on the aforementioned functional areas.

## 2.3 Contextual factors

Context is part of competence, as defined by Pawlowski & Holtkamp (2012, 2): "competence is a collection of skills, abilities, and attitudes to solve a problem in a given context." Contextual factors directly determine the competences which are the most important in each respective domain. Due to the strong effect of several elements on the conceptualization of globalization competence, its assessment, and what competences are truly the most important ones, this section presents the most significant contextual factors and addresses their influence to this work. This section is divided into three subsections presenting the major contextual factors that can affect the conceptualization of globalization competence; domain, national culture, and organizational culture. Furthermore, short cultural analyses on Finland and Japan are conducted within the national culture subsection.

The outcomes of globalization competence assessment can vary by general social competence, foreign language proficiency, the degree of cultural preparation, experience abroad, the nature and the degree of interaction with foreigners, and so forth (Grandin & Hedderich, 2009). Basically, the already acquired knowledge and experiences of the individual always affect the degree of competence at the time of assessment. However, as Deardorff (2004) has stated, it is important to define the purpose and target audience of the assessment prior to its administration in order to choose the best possible assessment method.

As shown before, several conceptualizations and lists across domains and centuries describe intercultural competence well in specific contexts, but no conceptualization can fit all contexts, cultures, and conditions. The application of cultural knowledge and skills to interaction situations with different cultural backgrounds is not addressed in many of the intercultural competence conceptualizations and lists, which creates concerns about the consistency for applying the definitions in diverse contexts. (Bennett, 2009.) According to Leiba-O'Sullivan (1999), cross-cultural competencies can be divided into dynamic and stable by competency dimensions. Three dimensions are recognized in her work; self-maintenance, cross-cultural relationship and perceptual. An illustration of the dimensions and the categorization into dynamic and stable is presented in FIGURE 5.

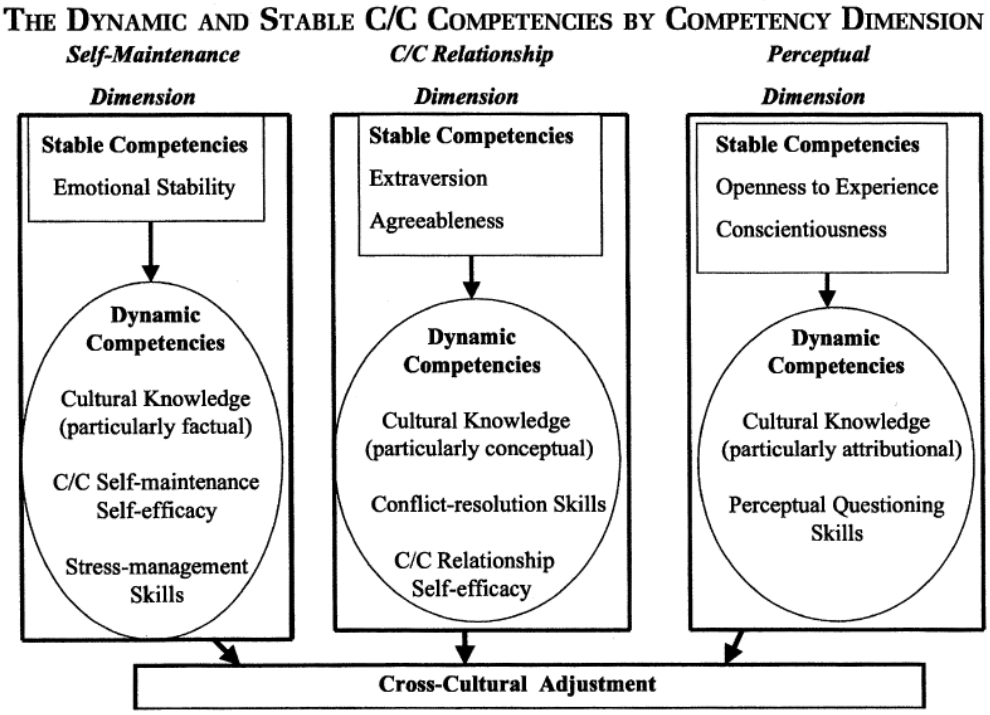


FIGURE 5 Dynamic and stable cross-cultural competencies by competency dimension (Leiba-O'Sullivan, 1999, p. 710)

Stable competencies are argued to represent the personality and abilities of the individual which Leiba-O'Sullivan considers the "must have" competencies for cross-cultural adjustment, as they remain relatively unchanged. On the contrary, dynamic competencies, such as knowledge and skills embody competencies that are "nice to have", can be learned through training, and develop in time. (Leiba-O'Sullivan, 1999.) Although the presented theory is pointed at developing cross-cultural competencies, it can be adapted to this work. Globalization competences can be perceived as dynamic because they tend to alter according to context and situation. Therefore, globalization competences are considered context-dependent by nature. Contextual factors, such as cultural background, shape the understanding of globalization competence, as well as determine the competences that are important. In the following subsections a closer look has been taken at three elements commonly influencing our thinking and reasoning:

- Domain
- National culture
- Organization

### 2.3.1 Domain

One of the major factors affecting the use of globalization competences is the domain of use. Naturally, specific intercultural competences required for a globally competent engineer are certainly different from the ones of a culturally

competent health care professional (Deardorff, 2009). Perspectives on internationalization are discussed from the fields of business, engineering and health care in order to provide an understanding on the differences between domains.

In business world, attention to intercultural issues has conventionally been divided into two areas: a global mindset and domestic diversity. The human side of companies has long been considered to affect profits, and intercultural competence has been regarded in many cases as the success factor of global joint ventures thanks to intercultural conflict prevention. Traditionally, companies have gained their intercultural knowledge by sending expatriates abroad to work, who have later returned to share their knowledge. (Bennett, 2009.) Nowadays the organization research on global leadership and competencies needed for global contexts is on the rise (Jokinen, 2005; Moran, Youngdahl & Moran, 2009). Strategic project management, cross-cultural leadership effectiveness, and project leadership are the key elements of effective global project management and leadership. Abilities such as influencing without formal authority, being able to bridge the cultural divide, and appropriate communication skills are essential for a global leader. Moreover, a good leader understands the perspectives, needs and values of all stakeholders involved. (Moran et al., 2009.) Another area of focus in internationalization of business has been on increasing cultural knowledge domestically, for example via trainings on cultural diversity issues (Bennett, 2009).

Information Technology is everywhere. Whether it is business, health care, education or politics, almost all walks of life use IT in one way or another. In today's constantly evolving world, the newest technology and innovations are created anywhere across the globe, thus requiring the modern-day engineers to possess also intercultural competences in addition to technical skills (Grandin & Hedderich, 2009). An engineer must have a solid technical understanding on a competitive level with peers from other parts of the world, while also staying on the edge of the most current knowledge of the field. Becoming a life-long learner is important for the aforementioned, but also for being able to think across traditional departmental perspectives and thus work interdisciplinary. An engineer working effectively in a globally distributed team is also able to compete in an international environment. Becoming a globally competent engineer means being mobile, open, flexible, tolerant, knowledgeable about other places in the world, culturally aware, accepting of difference, multilingual, and perceptive of difference in terms of engineering cultures. (Grandin & Hedderich, 2009.) According to a study by Continental AG, the curricula of engineer education must promote a global mindset in order to produce globally competent graduates (Continental AG, 2006). Ways of increasing global competence include coursework in international studies, encouraging second language learning, and developing international experience (Continental AG, 2006; Lohmann & Rollins, 2004). These could be achieved by, for example, dual majors or degree programs (technical major and intercultural or language studies), minors or certificates (language proficiency), international internships or projects, and study abroad (international experience). Finally, it is favorable that the type of

intercultural knowledge and experience are relevant and integrable to the student's major studies. (Lohmann et al., 2004.)

Similarly to business and engineering domains, the field of health care emphasizes the worker's ability to deliver "effective, understandable, and respectful care that is provided in a manner compatible with [patients'] cultural health beliefs and practices and preferred language (Office of Minority Health, 2001, p. 49)." Although the aforementioned definition has been taken from a national study in the United States, the statement itself is considered to be fairly generic and applicable to several countries and cultures. Enhancing the skills to learn about different cultural backgrounds and beliefs of the patient is the most important factor in providing quality health care to patients from all kinds of backgrounds (Anand & Lahiri, 2009). For the health care worker, it is important to understand the frame of reference of the patient and take the family hierarchies into consideration in order to make the right decisions and offer correct treatment. Unfortunately the biggest barrier for quality health care is Western ethnocentrism, constraining the practitioner's understanding of the patient's beliefs and behaviors, therefore sometimes leading to conflicts with treatment plans and diagnoses. (Anand & Lahiri, 2009.)

As pointed out, in any context involving human interaction the ability to understand and take other cultural backgrounds into account is pivotal in cultivating intercultural competence. Gaining knowledge of and experience in other cultures has been acknowledged to be important for becoming competent in intercultural contexts by a number of scholars (see for example Deardorff, 2004; Deardorff, 2006; Hunter et al., 2006; Johnson et al., 2006; Leiba-O'Sullivan, 1999; Olson & Kroeger, 2001; Pawlowski & Holtkamp, 2012; Spitzberg & Cupach, 1984). Although similarities in all of the presented domains exist, such as emphasis on knowledge about foreign cultures, the domain-specific requirements for performing effectively in a global context should always be taken into consideration. In this work, the assessment domain of globalization competences is Information Systems, and therefore more attention has been paid to domain-specific competences such as ICT and knowledge management.

### 2.3.2 National culture

Cultural aspects play a key role in defining globalization competence. A behavior, skill, or ability might be perceived as competent in one culture but not in the other, and therefore it is likely that there will never be a particular skill or ability that would be universally considered "competent" (Spitzberg & Cupach, 1984). Moran et al. define culture as "*the way we do things here*, which includes values, assumptions, and the subsequent behaviors that are influenced by cultural values and assumptions (Moran et al., 2009, p. 298)." Culture is learned through socialization, and thereby conflicts in a global context are likely to happen (Moran et al., 2009). However, it is important to remember that learning happens especially through difficult problem solving situations. Common issues causing cultural conflicts are sense of oneself, communication and lan-

guage, time and time consciousness, relationships, values and norms, beliefs and attitudes, and work habits and practices (Moran et al., 2009). It is therefore problematic to identify the globalization competences that apply for all cultures.

Several studies on classifying cultures have been made in the past decades. A classic way of dividing different types of societies is by the culture dimensions of Hofstede: individualism-collectivism, power distance, masculinity-femininity, and uncertainty avoidance (Hofstede, 1991). The country rankings of Hofstede's study have been utilized widely across disciplines and decades. However, the study was conducted in 1968 and 1972 inside IBM, and because of time passing and a rather homogenous environment, the generalization of the results to the modern world is now questionable. Therefore, a newer classification of cultures has been derived from Trompenaars' study (1998), which is congruent with the essential parts of Hofstede's culture dimensions, but amplifies the framework by adding more specific dimensions to it and with newer research results. The culture dimensions of Trompenaars (1998) are:

- Individualism vs. collectivism (individual vs. group; similar to Hofstede's definition)
- Universalism vs. particularism (rules vs. relationships)
- Neutral vs. affective (range of feelings expressed)
- Specific vs. diffuse (range of involvement)
- Achievement vs. ascription (how status is accorded)
- Internal vs. external (controlling nature or letting it take its course)
- Time orientation

TABLE 4 presents the rankings of both Finland and Japan according to Trompenaars' dimensions. Only the last dimension, time orientation, has been left out of the following table of rankings, as its measure differed from the ones of the other dimensions. Measures were the questions asked in the study, and their values are shown in percentages. Each of the dimensions is discussed in more detail in the following. Moreover, comparison between Finland and Japan is made, in addition to reflecting the cultural characteristics to the abilities of globalization competence.

TABLE 4 Culture dimensions according to Trompenaars (1998)

| **Dimension** | **Measure** | **Finland** | **Japan** |
|---|---|---|---|
| Individualism-collectivism | *"Opts for individual freedom."* | 64 | 39 |
| Universalism-particularism | *"Would not tone down their doubts in favor of their friend."* | 68 | 64 |
| Neutral-affective | *"Would not show emotions openly."* | 41 | 74 |
| Specific-diffuse | *"Would not be involved in work-related issues outside working hours."* | 89 | 71 |
| Achievement-ascription | *"Disagree on the question that respect depends on family background."* | 89 | 79 |
| Internal-external | *"Believes it is worth trying."* | 32 | 19 |

*Individualism-collectivism.* Similarly to Hofstede's study, it can be deducted from the research results of Trompenaars that Finland is slightly individualistic, and Japan a collectivistic society. Individualistic societies (such as American and European) are more self-centered and emphasize individual goals (Hofstede, 1991; Trompenaars, 1998). They tend to communicate more clearly and effectively, and come directly to the point, like Finnish people. In collectivistic societies (such as Asian, Latin American, African and Middle Eastern), on the other hand, politeness and the need to avoid embarrassment often take priority over truth (Thomas, 2008). In communication, expressions of mild disagreement are favored instead of saying directly no (Hofstede, 1991), especially in Japanese culture. Directly disagreeing in public would lead to "loosing face" and breaking the harmony in society. Keeping up the harmony in the group and society is indeed the prior goal of a collectivistic society (Hofstede, 1991). Moreover, collectivistic societies have a great emphasis on the group they belong to, and act more often according to common goals and make decisions collaboratively, whereas individual speaking up is considered a virtue in an individualistic society (Hofstede, 1991; Trompenaars, 1998). As an example, *the ability to take responsibility* might be considered important in Finland as an individualistic society where independent working is highly valued, whereas in Japan stepping up to take responsibility might be a challenge and an issue regarding the common goals of the group because of the nature of a collectivistic society. On the other hand, *the ability to collaborative problem resolution* might be more difficult to Finnish people than for Japanese.

*Universalism-particularism.* Finland and Japan are almost on the same level when it comes to applying rules of morals and ethics. Both are considered a universalistic society, and therefore they like to rely on word on paper instead of good relationships when it comes to deciding what is right or wrong (Trompenaars, 1998). Therefore, *the ability to use other people's expertise and knowledge* and *the ability to build national and international relationships* might be a challenge to the representatives of both cultures.

*Neutral-affective.* In neutral cultures, emotions should be kept hidden, and maintaining an appearance of self-control is important, whereas in affective cultures expressing emotions is natural (Trompenaars, 1998). Japan is quite strongly a neutral society where emotions are well-hidden. In Finland, however, it is acceptable to show emotion, but only to a limited extent. For both cultures, but especially to the Japanese, it might be difficult to identify oneself with a member of another culture and *understand their perspectives, needs and values,* and *to adjust to different cultures* because of their tendency to be under-emotional.

*Specific-diffuse.* Members of specific cultures strictly separate their private lives from their public ones, while diffuse cultures let them overlap (Trompenaars, 1998). Finland and Japan are similar in this dimension as well, as they like to separate their private life from the public. In Finland especially, much effort is usually put to arranging summer holidays well in advance that a

vacation from work is guaranteed. Furthermore, work and private email addresses and phone numbers are preferred to be separated from each other.

*Achievement-ascription.* This dimension refers to the degree of how status and power are determined in the society (Trompenaars, 1998). Similarly to the previous, Finland and Japan are both cultures that determine status by achievement and not by birth right. It has been interesting to follow the development of Japanese culture regarding the mindset of status. Japan was an empire nation, and the sovereigns were chosen inside the families prior to the end of World War II and creation of the Constitution of Japan in 1947 (Fält, Nieminen, Tuovinen & Vesterinen, 1994). However, nowadays the modern society determines status and power by achievement rather than by birth. The fast growth of recent decades and modernization has turned Japan into a major industrial country, where hard work and career progression is highly valued. Finland, on the other hand, has always been considered a working culture, where genuine achievements of an individual contribute to career development.

*Internal-external.* Referring to environment, this dimension describes the extent to which individuals feel they themselves are the prime influence on their lives (Trompenaars, 1998). Albeit not as exceedingly as Japanese, also Finnish people feel their lives depend more on external factors than on their own actions. Similarly to the definition of a collectivistic society, externally inclined cultures value harmony in the society (Trompenaars, 1998). Particularly in Japanese culture, cherishing harmony is important in everyday interaction, (Fält et al., 1994) and therefore confrontation is avoided at all costs.

The status quo of dividing world views is traditionally between the East and the West; Asian and Western (i.e. American and European) cultures. Currently, the academic culture and globalization education in the world is based on a Western framework, and is likely unable to offer proper globalization education to non-Western cultures such as Asian, Middle-Eastern or Australian indigenous. (Henderson, 2007.) Consequently, we arrive to the following dilemma; how to accommodate the globalization competence assessment framework to fit the needs and preferences of both the Western and Eastern cultures? A more detailed study on the Finnish and Japanese national cultures would be required in order to fully address the issue. In this work, however, further elaboration has been left out because of length limitations.

Moreover, defining engineering or IT related problems oftentimes takes place in a country-specific context, including factors such as localization (Henderson, 2007), availability of resources, workforce, and cultural preferences (Grandin & Hedderich, 2009). No software project is exactly the same as the other, but also no person is exactly the same as the cultural group they represent. Therefore, in order to bridge the cultural divide and decrease the probability of cultural conflicts, every individual and software project should be considered as a unique case. Intercultural communication skills play an important role in globally distributed software projects and thereby cultural differences should always be considered when operating in a multicultural environment.

### 2.3.3 Organization

The previous subsection discussed national cultures as a contextual issue to the conceptualization of globalization competence and its assessment. Organizational culture, however, is a collection of the attitudes, beliefs, values, working and communication habits, and common rules and goals within an organization, which may be socially constructed, historically determined, holistic, and difficult to change (Thomas, 2008). Examples of an organization herein are discussed from the perspectives of an educational institution and a business organization. This subsection discovers answers for distinguishing organizational culture from national culture, and what is the possible effect of an organizational culture on globalization competence assessment.

A common presumption is that the culture of the organization consists of its strategies, values and goals (Thomas, 2008). Similar to corporate organizations, also educational institutions have their own values, goals and practices. However, often these goals and values are the ones that the top management envisioned, and not revealing anything of the actual interactive culture within the organization and its members (Hofstede, 1991). Although the values of the leaders mold the organizational culture, the way they affect the members of the organization is through everyday routines and practices. Studies show that it is primarily these practices that are passed from one generation to the next, forming the organizational culture. National culture is something an individual is born into, and their national values and beliefs are well-developed already when entering an organization (educational or corporate), whereas the organizational culture is learned through socialization at the work place or in educational institutions. (Hofstede, 1991.)

On top of the organizational culture learned through socialization, educational institutions have their own behavioral rules and regulations that guide the decision making and teaching practices within the organization. Private higher education institutions can make their own regulations, which naturally differ from the regulations of other institutions. However, public educational institutions are often regulated by the Ministry of Education of the national government. Since the teaching and assessment methods differ by institutions and some are regulated by the ministries, it will be a challenge to adapt the globalization competence assessment framework to match national requirements, let alone the differences between countries. What globalization competence constitutes and how it should be assessed is determined by the organization in question, according to the rules and regulations of the organization itself and the government of each country.

## 2.4 Summary: globalization competence

Basic concepts of this work were introduced in this chapter. First, a selection of related concepts from other fields was presented. In general, knowledge of other cultures and intercultural experiences were considered vital for becoming interculturally competent in the opinion of scholars across fields (see for example Deardorff, 2004; Deardorff, 2006; Hunter et al., 2006; Johnson et al., 2006; Leiba-O'Sullivan, 1999; Olson & Kroeger, 2001; Pawlowski & Holtkamp, 2012; Spitzberg & Cupach, 1984). However, this work focuses mainly on globalization competence assessment in the IS field, and thus domain-specific abilities are needed. The research on internationalization competences by Pawlowski & Holtkamp (2012) was chosen to be used as a conceptual foundation for this work due to its suitability for assessing globalization competence in the IS field. Their research is thus continued in this work with additions from my own empirical studies. Internationalization competences comprise of seven competence categories, of which five were introduced in more detail in this work:

- ICT competences
- Project management and leadership competences
- Collaboration and knowledge management competences
- Communication competences
- Intercultural competences

*Globalization competence* in this work is consequently defined as a collection of skills, abilities, and attitudes of such functional areas as ICT, project management and leadership, collaboration and knowledge management, communication, and culture, which enable the individual to perform effectively in an international context in the IS field.

Next, the contextual factors affecting globalization competence assessment were identified. Domain-specific contextual factors exactly determine the competences which have the most significance in each field. Different factors affecting the conceptualization of globalization competence and its assessment were presented in the previous section: domain, national culture, and organizational culture. From the domain point of view, similarities in emphases exist on what constitutes effective performance in a global context. For instance, sufficient knowledge on foreign cultures is considered a prerequisite in almost every intercultural study across fields. From the point of view of national cultures it can be concluded that cultural preferences are important to be taken into consideration in communication to avoid conflicts, or in IS work such as system design localizing systems to match cultural practices. Likewise, each organization has its own culture and possibly norms which drive its actions. Domain, culture, and organization specific requirements should always be taken into account regarding work in a multicultural context as every domain, organization, project, team and person is unique. Nonetheless, all contexts require human inter-

action, thus making intercultural communication skills and the ability to take other cultural backgrounds into consideration essential.

In conclusion, the globalization competence assessment framework has to be adapted to the requirements of the context, as different abilities and methods are considered more important than others in different organizations, cultures and countries. In regard to this work, the scope is on developing the globalization curricula in Finnish IS higher education practices and comparing them to Japanese practices. Short cultural analyses on both countries showed that, as a matter of fact, Finland and Japan are quite similar in their thinking. On that account, further research should be conducted on creating a practical collaboration in course organization between Finland and Japan.

# 3 COMPETENCE ASSESSMENT

Job selection, recruitment, allocation and career development in enterprises have traditionally utilized assessments of skills, knowledge, performance and personal attributes of the candidates in order to match the requirements of the tasks with the right employees (Chilton & Hardgrave, 2004; Spencer Jr., 1997). Recently, however, competence assessments have been commenced also for managing organizational objectives (Campion, Fink, Ruggeberg, Carr, Phillips & Odman, 2011). Effective performance is taken for granted in all walks of life to meet the requirements and expectations of various roles, tasks and positions of a business. The selection of correct people for suitable positions results in increased performance, value and revenue for the business. This leads to extra pressure for educational systems to produce work-ready graduates who are competent in their field (Grant & Young, 2010). Pairing suitable individuals with the right positions requires appropriate instruments for assessing and measuring individuals' abilities and knowledge (Grant & Young, 2010).

Developing competence is a life-long process. Moreover, assessing professional competence is context-dependent and varies according to domain. (Deardorff, 2009; Leigh, Smith, Bebeau, Lichtenberg, Nelson, Portnoy, Rubin & Kaslow, 2007.) A flexible and adaptable assessment approach is desired for assessing the development and maintenance of multidimensional professional competence (Leigh et al., 2007), especially in an international setting (Fantini, 2009). Assessing intercultural competence requires a multimethod, multiperspective assessment approach which is integrated into the curriculum and study program as a whole to ensure reliable assessment of students' competence (Deardorff, 2009). Competence profiles in human resources management and education have already emerged to promote lifelong learning in today's knowledge society (Paquette, 2007).

This chapter discusses thoroughly what competence assessment is. First, the relation of this work to the overall learning process is discussed. Then a general definition of competence assessment is given, including a discussion on the current state of competence assessment in the IS field. Afterwards the timing of the assessment is reviewed. Next, four different types of assessment

methods are presented and each type is introduced with several representative methods. Thereafter recommendations for choosing the right assessment method are presented. The current state of globalization competence assessment in Finland and the methods used is discussed on the basis of my previous research. The chapter is summarized in the final section.

## 3.1 Relation to overall learning process

First, the relation of competence assessment to the overall learning process must be clarified. In particular, competence assessment should not be confused with *evaluation of learning*. The role of competence assessment in this work can be depicted through Kirkpatrick's (1996) taxonomy for training evaluation, which aims at explaining the purpose of evaluation while providing aid for implementing it in a professional environment. The taxonomy consists of four levels; reaction, learning, behavior and results, of which all should be gone through in order to achieve the best possible improvement. The levels are described as follows (Kirkpatrick, 1996, 55-56):

- **Level 1: Reaction** measures how participants feel about the training program including the topic, speaker, schedule and so forth.
- **Level 2: Learning** evaluates how the knowledge acquired, skills improved or attitudes changed due to training.
- **Level 3: Behavior** measures the extent to which participants changed their behavior at work according to training.
- **Level 4: Results** including increased sales, higher productivity, bigger profits, reduced costs, less employee turnover and improved quality that occurred due to training are measured.

Competence assessment in this work does not directly evaluate learning, but rather is situated on the behavior level in the presented taxonomy. Likewise in educational setting, the learning level evaluates how the knowledge, skills and attitudes have changed due to teaching. However, this could be merely evaluating theoretical knowledge and not competence, and therefore, the behavior level is seen as the point where competence assessment emerges. In educational setting the behavior level measures the extent to which students change their behavior based on the learning tasks during the course, that is to say, become competent by solving a problem in a specific context.

## 3.2 Definition of competence assessment

The assessment of skills, knowledge and abilities of an individual is comprehended differently according to domain. For instance, the term *competence as-*

*sessment* (or competency assessment) is typically used in social sciences such as psychology (Kaslow, Rubin, Bebeau, Leigh, Lichtenberg, Nelson, Portnoy & Smith, 2007; Leigh et al., 2007), education (Baartman, Bastiaens, Kirschner & van der Vleuten, 2006; Wolf, 2001), and international education (Deardorff, 2006; Fantini, 2009; Krajewski, 2011), whereas concepts such as *performance ratings* (Chilton & Hardgrave, 2004), *job analyses* (Campion et al., 2011), and the *assessment of user competence* (Marcolin, Compeau, Munro & Huff, 2000) are discussed in the IT field rather in a mixed manner. Many of the competence assessment related examples in this interdisciplinary study are drawn from other fields, such as psychology or international education, because of the scarcity of established practices in the IS domain.

All of these concepts relate to each other and the assessment of skills, knowledge and abilities of an individual. Nevertheless, performance ratings and user competence assessments are often focused on a single issue to be measured, such as performance in IT work. Globalization competences, on the other hand, include not only performance-related competences, but also competences related to intercultural communication and collaboration, and thus performance ratings and user competence assessments are not suitable for competence assessment tools on their own. This work attempts to introduce a culture of competence assessment to the IS field, and accordingly the following definition of competence assessment is proposed to be used in this work as a foundation. According to Grant, Elbow, Ewens, Gamson, Kohli, Neumann, Olesen & Riesman (1979, 5-6, as quoted by Wolf, 2001, 2), competence-based assessment in educational setting can be defined as

> a form of assessment that is derived from a specification of a set of outcomes […] that assessors, students and interested third parties can all make reasonably objective judgments with respect to student achievement or non-achievement of these outcomes; and that certifies student progress on the basis of demonstrated achievement of these outcomes. Assessments are not tied to time served in formal educational settings. (Grant et al., 1979, p. 5-6; Wolf, 2001, p. 2)

Competence assessment tools in the IS domain typically evaluate the performance of an employee. The evaluations serve as feedback to help improve performance, motivate self-development of the employee, and to justify actions of the management such as promotions, pay increases or decreases, demotions, or dismissals (Chilton & Hardgrave, 2004). Therefore, they are often called performance evaluations (Chilton & Hardgrave, 2004) or job analyses (Campion et al., 2011) instead of competence assessments. Nevertheless, the term competence assessment is gaining ground in the IS field as of late. A recent study by Campion and colleagues showed that job analyses and competence assessments are both linked to organizational objectives and that they can be utilized in organizational development (Campion et al., 2011).

The term competence assessment provides an appropriate general view for assessing the skills, knowledge, capabilities, characteristics and performance of an individual. Competence assessment reveals if the student has achieved the

desired learning outcome or not, and offers decision support for further training and development needs for the student to perform effectively in a desired situation in a given context. Competence assessment as a tool for higher education is not generally practiced in the IS domain as of yet, but prospects for adapting the assessment practices from professional life into higher education with an educational focus is seen as a promising challenge.

## 3.3 Timing of the assessment

As already discussed, intercultural competence is a life-long process that evolves and develops over an extended period of time (Deardorff, 2006; Krajewski, 2011). This section shortly discusses the influence of time on globalization competence assessment in educational setting.

Deardorff (2006) concludes in her study on intercultural competence assessment that measuring intercultural competence over time is essential. Instead of conducting sole assessments, intercultural competence growth needs to be recognized as a continuous process and not resulting from single experiences, such as study abroad (Deardorff, 2006). Consequently, this leads to a dilemma of the capability of institutions to certify students' global and intercultural competence, given the complexity of the construct (Deardorff, 2006) and limited time frame of studies. Without a doubt, institutions of higher education face a challenge in assessing students' globalization competence, as the development process requires an extended period of time.

In the ideal situation, competence should be assessed several times in order to measure its development (Põldoja, Väljataga, Tammets & Laanpere, 2011). The first competence test would be taken in the beginning of studies at the university, second during the studies, and additional tests in working life. The results from the first tests could then be compared with earlier results to determine the degree of competence development (Põldoja et al., 2011). Similar timing of the assessments could be done during a single study module: Initial assessment of competences in the beginning of the course, optional assessments during the course (depending on the length of the study module), and final assessment at the end of the course. Naturally this causes increased workload to educators, but is nevertheless worthwhile. Furthermore, Kaslow et al. (2007) note that the assessments at earlier stages of development are inclined to reflect breadth, simplicity, and relatively low accuracy, whereas assessments at later stages of competence development are more likely to display greater depth, complexity, and higher level of fidelity (Kaslow et al., 2007).

Creating a sincere culture of competence assessment in higher education in the IS field is a prolonged process, which requires yet more comprehensive research, commitment of stakeholders and moreover, radical changes in the organization of assessment in higher education. Globalization competence is a prerequisite for global citizenship in today's multicultural world, and its assessment already during studies should not be taken lightly. The aim of this

work is not to change things overnight, but to take initial steps towards the revision of assessment culture in higher education in the IS field by showing the importance of globalization competence assessment and raising awareness on the issue.

## 3.4 Assessment method types

IS field lacks a culture of competence assessment (Campion et al., 2011) and although different types of evaluations exist, they are often aimed at evaluating only specific aspects of globalization competence, such as performance. This section presents different types of competence assessment methods found in literature and categorizes them according to their purpose of measuring. The categorization is derived from the field of health care and herein adapted to better match the requirements of the IS domain. Other suitable types of methods for assessing competence exist (e.g. psychometrics), yet the categorization from the health care field was seen appropriate and was thereby utilized in this work without further category additions. The following four types of assessment methods are taken into more detailed scrutiny in this work:

- Assessments measuring knowledge
- Assessments measuring decision making
- Assessments measuring performance and personal attributes
- Assessments measuring practice-based skills and tasks

Each category and the assessment methods within are presented in more detail in the following subsections.

### 3.4.1 Assessments measuring knowledge

Assessments methods measuring knowledge include:

- Written assignments
  - Essay
  - Report
  - Learning diary
- Final exam
  - Essay
  - Short-answer questions
  - Multiple-choice questions

Assessments measuring knowledge, also known as pen-and-paper tests (Marcolin et al., 2000), are generally considered as the foundation of any competence assessment system (Leigh et al., 2007). Knowledge measuring assessments typi-

cally include *written assignments such as essays, reports, learning diaries* (albeit learning diaries are also considered a self-evaluation method when measuring decision making), and *final exams*. Final exams can likewise consist of essays, short-answer questions, as well as multiple-choice questions.

Written final exams and assignments are doubtless the most popular assessment methods in education, as they are an efficient and cost-effective way of measuring knowledge (Leigh et al., 2007). Written response exams can also be conducted by using a computer-based testing program in addition to actual pen and paper (Marcolin et al., 2000). Assessing competence in a problem solving scenario can be done in a written manner explaining how the problem scenario could be solved (Leigh et al., 2007). Nevertheless, other assessment method types prevail over written methods in the assessment of actual competence.

*Short-answer questions* are good for interviews and exams. Interview is a suitable method for testing spoken language and conversation skills in a conversation-like assessment situation. Naturally, a proper assessment of language skills requires more than one method to be reliable.

*Multiple-choice exams* are likewise a popular and inexpensive way of testing knowledge and reasoning skills (Leigh et al., 2007). Computer-simulated multiple-choice tests are easy to conduct for testing all kinds of knowledge, decision making and problem solving abilities in written format, especially if the number of students to test simultaneously is high. Multiple-choice exams are perhaps overly popular in modern IS teaching because of a high number of students in classes and the lack of knowledge of other assessment methods from the instructor's side. However, it must be remembered that some courses taught in IS subjects include purely technical knowledge, which is suitable to be tested via a multiple-choice exam. In the hands of a skilled student and examiner, even the multiple-choice method can yield valid results (Leigh et al., 2007).

To conclude, assessments testing knowledge require the answer to explain *what can and should be done in the problem situation and which actions should be taken*, whereas assessments measuring decision making or performance focus on the actual accomplishment of the problem solution or task (Marcolin et al., 2000). The latter are discussed in more detail in the following.

### 3.4.2 Assessments measuring decision making

Assessments methods measuring decision making consist of:

- Case study
- Student's self-evaluation
    - Learning diary
- Live interactions
    - Meetings and events with companies
    - Project

*Case studies* can be implemented as written vignettes, such as descriptions of a problem situation in a company, or analysis on a topic, and then tested orally as a presentation or written in a report. Literally, written vignettes refer to short descriptions or episodes on a certain topic (Oxford Dictionaries, 2010c). Written vignettes serve situations where identification of a problem, asset, or differences in people's perspectives is required. However, the accuracy of the assessment results is sometimes compromised, as vignettes test the competence of decision making in written form. Evaluating case studies and presentations require examiners to be appropriately trained, unity in the test environments throughout candidates, and a reliable system for scoring qualitative responses. (Leigh et al., 2007.) The main benefit of using case studies is to offer students an opportunity to use their own decision making skills to solve a problem in a given context with the tools provided (Leigh et al., 2007; Marcolin et al., 2000).

*Self-evaluations* are written by students themselves when assessing their own abilities (Marcolin et al., 2000). The main argument to promote self-evaluations of students is that in higher education students should already be learning in a self-regulated manner, rather than receiving information from teachers and then processing it. Self-regulation in practice is interpreted as active monitoring and regulation of different learning processes, such as setting to and orientation towards personal learning goals, employing strategies to achieve goals, and managing resources. In order to empower students to become self-regulated learners, instructors need to create actual opportunities for self-monitoring and evaluation of goal progression, for example by providing self-evaluation tasks encouraging the reflection on learning progress or feedback assessment (discussed further in the next subsection). (Nicol & Macfarlane-Dick, 2006.) Self-evaluations offer a great way for evaluating one's own understanding of different issues, performance, work management, evaluating issues from different cultural perspectives and realizing the impact of culture – and thereby learning by becoming aware. Self-evaluations can be reported in the form of a learning diary, which serves as a self-reflection tool for the student, and furthermore, can be used by the examiners to evaluate the student's development and performance. It is recommended that the instructors offer a set of advisory questions to the students to guide their self-reflection process.

Collaboration and communication skills in intercultural business situations have become increasingly important in corporate world. Therefore, *live interactions situations* with clients, companies, and stakeholders should be offered already in education before entering the professional world. These could be implemented as, for example, meetings and events with companies, or as a student project delivered to a client. In business meetings or client appointments, live and impromptu interaction is oftentimes required, therefore making quick reactions, clearly articulated responses, and the ability to make decisions crucial. Real life like situations, observed or reported afterwards, can aid in assessing a variety of competences.

As a summary, assessments measuring decision making such as case studies, student's self-evaluation methods and live interaction situations can be

used in assessment at different stages of professional education, or as requirements in assessments (Leigh et al., 2007). These types of assessments are specifically suitable for assessing globalization competence, as for example intercultural interaction situations are easily built around case studies, company meetings or projects.

### 3.4.3 Assessments measuring performance and personal attributes

Assessments measuring performance and personal attributes comprise of:

- Feedback assessment
  - Observer assessment
  - Peer assessment
- Global ratings
  - Behavioral Rating Scale
- Presentation

Feedback from other people is always useful. Whether it be a question of improving a product, finding the best target market for a business, or simply developing oneself and learning, feedback from different stakeholders is valuable. As discussed in the previous subsection, *feedback assessment* can help students in becoming self-regulated learners (Nicol & Macfarlane-Dick, 2006). Feedback assessment offers a great opportunity for the self-development of the student through an appreciation by externals (Leigh et al., 2007; Nicol & Macfarlane-Dick, 2006). Intelligent learners have personal learning goals in mind guiding their learning process and goal achievement which can be assessed by a feedback method. Feedback offers information on the current state of learning related to the student's personal goals. Consequently, feedback acts as a source of internal feedback on the student's engagement with learning activities, and thus can be used to evaluate the progression towards set goals. (Nicol & Macfarlane-Dick, 2006.) Feedback assessments in user competence evaluations are often referred to as observer assessments, involving skill evaluations by independent expert observers who judge the performance and characteristics of the candidate by means of interviews and behavioral observations (Marcolin et al., 2000). Peer assessment could be a more inexpensive way of implementing feedback assessment into a study module, because it offers a slightly different perspective on the performance and characteristics of the examinee. Student involvement in higher education evaluation has become a world-wide trend, increasing the use of peer assessment as an evaluation method (Falchikov & Goldfinch, 2000). In peer assessment, students are given the opportunity to judge the work of their peers by pre-defined criteria and standards. Especially in courses of advanced studies peer assessment is proven to be useful, as senior students tend to have a more comprehensive understanding of their own discipline than their junior peers. Moreover, peer assessment has been found to promote learning. (Falchikov & Goldfinch, 2000.) Feedback from students can be valuable infor-

mation for the assessor party, as student evaluations (by peers) would serve as a proof of the actual workload of each person in a group work.

As an instance of *a global rating scale*, Chilton & Hardgrave (2004) implemented a Behavioral Rating Scale for the IT field. 17 important behaviors and skills for an IT professional are being rated on a 1-5 Likert-scale ranging all the way from technical and managerial skills to humane people skills. The scale is mainly meant for supervisors to complete, and thus mono-source bias is a concern. Nevertheless, the rating scale could be used within a group feedback evaluation to provide feedback from multiple sources. (Chilton & Hardgrave, 2004.) The purpose of the Behavioral Rating Scale is to act as a single instrument for assessing the overall performance of an IT worker, and therefore it is not suitable for assessing globalization competences per se. The scale lacks the intercultural dimension, and moreover, measures behaviors such as *leadership*, instead of competence, such as *the ability to make decisions*. However, the scale has items (e.g. *listening*) which are also included in globalization competences (e.g. *ability to listen to others and consider their thoughts*), and thereby the scale could be used together with another method, such as feedback assessment.

*Presentation* is listed as an assessment method herein, as traditionally it has been used as a complementary evaluation method included in various types of assessments, but it can also be used independently as a single assessment method. A presentation has typically been the conclusion of a case study, a project, or other kind of group work or independent task, and its evaluation a part of the course grading. However, courses aiming at developing the creativity, public speaking, live performance, or the student's work (such as a design model of a system) could as well be assessed merely by the presentation method. Presentation can be used as an assessment method independently or complementarily.

Performance and personal attributes assessments, such as global ratings, feedback assessments, portfolios, and presentations are mainly used for measuring the development of professional competence in order to discover the need for change in certain personal or professional attributes or behaviors. The assessments are usually rated accurate, but can be expensive, time consuming, and require a number of assessors and trained examiners. (Leigh et al., 2007.) Particularly feedback assessment and presentation methods could be useful for assessing globalization competence.

### 3.4.4 Assessments measuring practice-based skills and tasks

Assessment methods which measure practice-based skills and tasks include:

- Role-playing situations
- Computer simulations
- Live interactions
    - Meetings and events with companies
    - Project
    - Internship

*The role-playing method* is perhaps a less familiar competence assessment method in higher education in the IS domain. The method is more commonly employed in the field of medicine, where students have praised role-plays for the opportunity to practice communication skills in practice in real life like situations (Magnani, Minor & Aldrich, 2002). However, role-playing games can easily be implemented in short-duration workshops or special educational events and seminars in the IS field as well. A role-play could be established in a workshop around a topic or situation requiring team work or collaborative task accomplishment (e.g. project meeting with a client), and all participants would be appointed a specific role in the group task. The role could be merely a position (e.g. project manager, company stakeholder) or an assignment-like task (e.g. you as the project manager are to lead the project meeting to an end result X). A role-play is an inexpensive way of assessing a number of candidates simultaneously, for instance using an observer to evaluate the group interactions. Albeit a role-playing game strikes as a method for younger participants than higher education students, it can be a remarkably effective group building and interaction assessment method for professional life, and moreover, for educational purposes. The world's largest international student organization, AIESEC, has been known for having group building games in various workshops and events, and thus ready-made stories and group building games can be found from their training materials.

In the field of health care, *computer simulations* have been utilized in situations which are impossible to be evaluated otherwise, such as decision making in a life-threatening situation (Leigh et al., 2007). Notwithstanding, Begum & Newman (2009) in the field of business introduced a computer simulated instrument for the assessment and development of business and transferable skills of students. Transferable skills consist of team working, interpersonal, leadership, self-reliance, and communication skills, whereas business skills are the skills required for solving business and management problems. The computer simulation is a web-based business game providing students the opportunity to start their own company. Financial resources are limited and several tasks of enterprise management have to be dealt with, such as marketing, product development, finance, business partner negotiations and human resource management. As written evaluations of the simulation, a business plan in the beginning and a final report at the end of the game are to be produced. The students are evaluated both at the beginning and at the end of the simulation in order to assess the degree of competence development through the simulation. The computer simulation method yet requires further investigations, but so far the research results have showed that the opportunity to use business skills in practice is appreciated. (Begum & Newman, 2009.) ICT, project management and leadership, as well as collaboration and knowledge management competence could well be assessed through a computer simulation game, particularly when live interaction with other people is not possible. The computer simulation method is generally considered high on fidelity but can become an expensive investment unless a large number of students can be evaluated simultane-

ously. Furthermore, the continuously advancing technological development can create extra obstacles for the maintenance of the simulation program, as the content needs to be refreshed and the technology updated and monitored. (Leigh et al., 2007.)

The foremost methods for assessing project management and leadership, collaboration and knowledge management, and communication competence are *live interaction methods*, for instance meetings and events with companies, projects, or a practical training in the form of an internship. As already mentioned in an earlier subsection, live interaction methods can be designed to fit various types of assessments, and are herein included in two assessment method categories; assessments measuring decision making, as well as practice-based skills and tasks. Practical training and project work for a company already during the study years are valuable assets later in professional life. Both parties benefit from students in practical training (internship) or from a student project; companies gain new ideas for design and/or development tasks, and students get valuable experience in work life. Real life situations, for instance a traineeship in a company or a project for a client, are the best cultivators of practice-based skills and, moreover, can be considered beneficial in developing the entire collection of globalization competences.

These "hands-on" assessments are completed in a situation representing real life circumstances as closely as possible so that task accomplishment, practice-based skills, and performance of the candidate can be evaluated (Leigh et al., 2007; Marcolin et al., 2000). Assessments measuring practice-based skills and tasks consist of such methods as role-playing situations, computer simulations and live interactions. Client meetings and projects in particular are difficult to be allocated into a single category because of their multidimensional nature, and can thereby be found in multiple categories in this work.

## 3.5 Choosing a suitable competence assessment method

The preceding section presented different types of competence assessment methods categorized based on their purpose of measurement. In order to encourage the creation of competence assessment culture in the IS domain, this section further discusses recommendations for choosing the right assessment method for different types of situations. A concrete proposal for an assessment change process and an assessment plan is presented in chapter five so as to integrate globalization competence assessment into the curriculum.

In her research, Deardorff (2004, 2005, and 2006) concluded that a multimethod, multiperspective approach, which is ideally integrated into the curriculum and program as a whole, is important to be used when measuring intercultural competence. Approaches blending methods such as portfolios, logs, observation, interviews, performative tasks, and so forth are generally more worthwhile for assessing intercultural competence compared to traditional paper-and-pencil tests. These newer test formats permit multidimensional as-

sessment approaches that are essential for monitoring and measuring a complex phenomenon such as intercultural competence. (Fantini, 2009.) Deardorff (2006), Leigh et al. (2007), and Fantini (2009) have suggested that the best option for assessing intercultural competence is to use a mix of quantitative and qualitative methods. The same applies to assessing globalization competences. The amalgamated nature of the abilities, skills and knowledge to be assessed demands a combination of assessment methods in order to be assessed truthfully. For example, assessing *the ability to align ICT with the business requirements* surely requires a different assessment method than *the ability to adjust to a different culture,* yet both abilities comprise globalization competence.

Besides mixing qualitative and quantitative competence assessment methods in assessing higher education students, it is vital to remember that different assessment methods are required when assessing individual students and groups of students. As a recommendation, when assessing collaborative and communication competences, a group work method could be used, but it should be complemented with a method for assessing each individual student's competence (usually theoretical knowledge) in order to ensure reliable assessment of both collaboration competence and individual knowledge. Particularly in globalization competence assessment, educating the students to interact with people from different cultural backgrounds can be evaluated and assessed in a multicultural group work. Case studies, projects, presentations, role-plays, computer simulations and different kinds of live interactions can be implemented as group work assignments.

Using a mix of methods for overall assessment is beneficial in avoiding free riders. For example, if a case study method done as a group work is used as the only assessment method on the course, it might lead to inaccurate grading of students, in case the distribution of work has not been even within the group. An additional method should be used for assessment in order to verify the accurate degree of learning of each student. Therefore, when choosing an assessment method for a course, the responsible of the course should always remember to pick suitable methods for assessing both individual students, and groups of students (if necessary). Furthermore, e-learning prospects involve yet additional requirements for choosing the correct assessment method for teaching.

When choosing a suitable competence assessment method, instructional and learning objectives, course design and implementation, and assessment must be inseparably linked in order to provide a trustworthy and high-quality educational process (Fantini, 2009). Fantini (2009) illustrates the notion of quality assessment being integral to every aspect of the educational process in FIGURE 6. All the components around the circle are connected with each other, from needs assessment to evaluative assessment, both long and short term. The gemstone model graphically shows how assessment is directly related to unambiguous goals and objectives, and that assessment measures their attainment by the learner. (Fantini, 2009.)

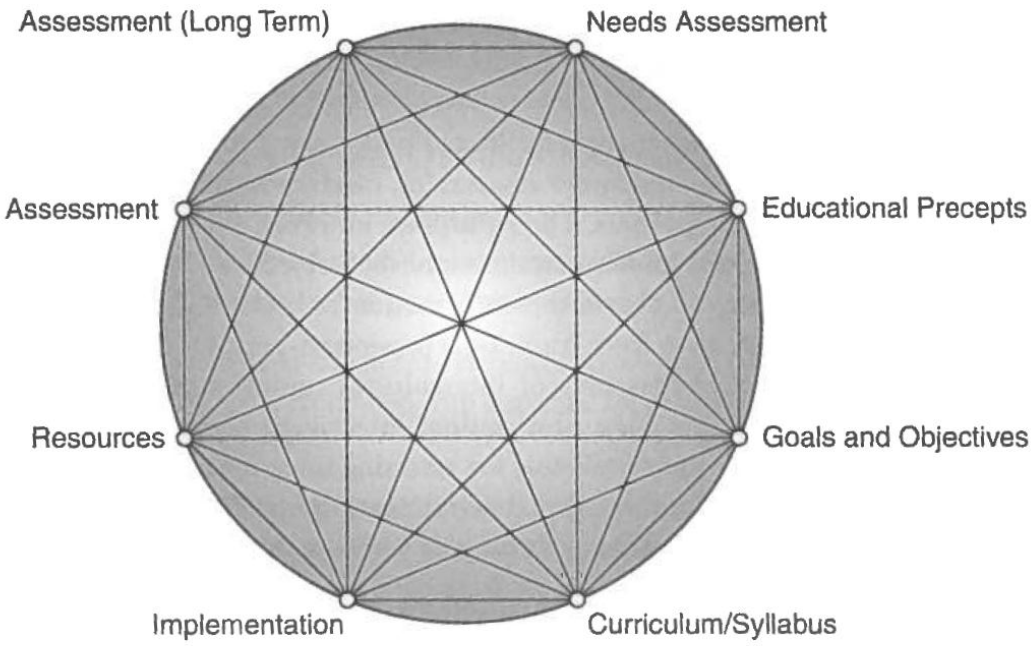


FIGURE 6 The gemstone model (Fantini, 2009, p. 461)

Furthermore, it becomes critical for the educators and trainers to understand the components of the assessment, and how to establish instructional objectives and assess them appropriately. A list of aiding factors to be considered in order to achieve quality assessment is presented below (Fantini, 2009, adapted from Deardorff, 2004, 324):

- The purpose: *Why assess?*
- The target audience: *Who is to be tested?*
- Clarity about successful outcomes: *What outcomes are being assessed?*
- Assessment tools: *The use of proper assessment tools and strategies that are aligned with the learning objectives.*
- The assessment procedure: *How the test is administered, evaluated, and scored?*
- Aspects of the tests used: *What are their scope, efficiency, length, validity, and reliability?*
- Representative and varied samples of student achievement: *Ongoing and not just end-testing.*
- Avoiding bias: *Extraneous interferences that may affect obtaining adequate and appropriate samples.*

Most importantly, the data from the assessment should serve as feedback to students on their globalization competence development. By detecting competence gaps, the assessment data is beneficial for improving the study program for the future. Consequently, students' learning improves when the changes are

adapted to the study program and curriculum as a whole. The data should also be properly communicated to relevant stakeholders, who might benefit from the assessment results. (Deardorff, 2009.)

Choosing the suitable assessment method for a course poses a number of important aspects to be considered. It is important to take into account the aspects discussed earlier in this section; the target of assessment (individual or group), in addition to using a mixture of qualitative and quantitative assessment methods. Based on my personal experience, modern-day IT/IS students seem to prefer completing a study module by a practical work alone rather than in a group, and without a final exam. Completing the practical work itself is a learning process for the student. If done in a group, the group interactions and mechanics sometimes interfere with the learning process. However, if collaboration and group work skills are being assessed, then the assessment should include both working in a group for a practical work/case study/project, and an individual assessment through a final exam or a separate written assignment. Nevertheless, more investigations are needed to discover the assessment preferences of the students in the IS field.

## 3.6 Assessment methods in Finland

This section presents the current state of globalization competence assessment and the methods used in Finland. First, a general view on competence assessment in Finnish higher education is given. Afterwards the findings of my previous empirical study are summarized so as to show the currently used methods for assessing globalization competence in IS courses in Finnish higher education institutions (see Stén et al., 2012).

Today's global knowledge society demands graduates to be interculturally competent (Deardorff, 2005; Paige & Goode, 2009; Spitzberg & Changnon, 2009), competent in their own field, and at the same time ready for work (Grant & Young, 2010). In recent years, the focus of higher education institutions has been shifting towards fostering the good positioning of their graduates in the professional world. Consequently, one of the most important issues requiring attention herein is the unrealized competence development in higher education. In order to meet the requirements of today's labor market and map the current state of competences of graduates in higher education in Europe, a European Commission funded project by HEGESCO *(Higher Education as a Generator of Strategic Competences)* was carried out in sixteen European countries, including Finland. (van der Velden & Allen, 2009.) The project included multiple disciplines and cannot thereby be directly applied to this work and the IS field, yet the results can give some direction of the assessment methods used in Finnish higher education institutions in general. TABLE 5 gives a glimpse on graduate students' opinion on the current methods in Finnish higher education.

TABLE 5 Emphasis in teaching and assessment of higher education in Finland (Pavlin, 2009)

| **Graduates considered a great emphasis in teaching and assessment of higher education on…** | **Finland** | **European average** |
|---|---|---|
| Project and/or problem-based learning | 32,6 | 24,7 |
| Written assignments | 66,8 | 52,4 |
| Oral presentation by students | 30,3 | 36,3 |
| Multiple-choice exams | 1,8 | 17,2 |

It is positive to discern that Finnish teaching and assessment methods put more focus on project work and problem-based learning compared to Europe in average. Particularly problem-based learning methods enhance the development of practice-based competences. Written assignments are emphasized to a greater extent in Finland than in other countries, whereas oral presentations by students are used to a lesser degree than on average in Europe. However, multiple-choice exams are quickly losing ground. Multiple-choice exams typically demonstrate learning by heart, while written assignments are more related to the acquisition of academic skills (van der Velden & Allen, 2009). This is concrete evidence on the development of competence-based assessment in Finnish higher education – but is the IS domain at the same level?

One of the aims of this work is to enhance the collaboration between Finnish and Japanese universities in the field of IS. Collaboration between foreign partner universities is recommended in order to create a truly multicultural environment for developing globalization competence of students. As an example, a study module could be organized as a virtual e-learning course together with another university to provide students an opportunity to work on group assignments with students from other countries. Thereby the real life challenges of intercultural situations would emerge naturally, and thus students would be given a chance to learn and develop their globalization competence through authentic problem solving situations. However, first the current state of globalization competence assessment and used practices in both countries must be investigated before cooperation can be initiated. Next, the current assessment methods used for assessing globalization competences in Finnish higher education IS courses are presented.

A small-scale case study was conducted as part of my past research (Stén et al., 2012) in order to discover the current assessment methods used for different kinds of learning objectives in higher education courses in the IS field. The case study was implemented as a mixed method. First, a document analysis was conducted on the course objectives, learning outcomes, and teaching methods based on the online documentation of the courses, followed by empirical data collection in the form of an online survey to the instructors of the courses. Instructors of six higher education IS courses participated from Finnish higher education institutions including Jyväskylä, Turku and Oulu. The course topics included international software business; global communication, coordination and relationship management; ICT industry and growth; off-shoring and near-

shoring; globally distributed software development; global knowledge management; and cultural issues.

The results of the empirical survey confirmed the document analyses. Orally examined case studies alongside with group work were considered the most popular assessment methods utilized in courses. The third popular methods were essays and short-answer questions in a final exam. Next, the usefulness, reliability and understandability of the methods were evaluated. The most useful assessment method in the experts' opinion was group work. However, inconsistency with the interview results exists due to categorizing group work as a separate assessment method, taking into account that for example case studies can be done as group or individual assignments. Thereby also case studies should be considered useful according to the interview results. Essays and orally examined case studies were considered the most reliable methods according to the experts' agreements on the students' awareness of their competence development, the assessment results being easily reproducible, and the results being comparable with each other. Finally, the experts agreed on the most understandable assessment method being (in the order of popularity) orally examined case studies, group work and essays with only 0.1% difference in agreement. (Stén et al., 2012.) All in all, the most popular methods used for assessing globalization competence in the IS domain in Finland are:

1. Orally examined (presentation) case studies
2. Group work
3. Essays and short-answer questions in a final exam

Nevertheless, further research is required in order to determine the most suitable assessment method for each globalization competence category. At present, the results of the interview do not define exactly different assessment methods for technical competences compared to, for instance, collaboration competences.

## 3.7 Summary: competence assessment

The contents of this chapter explaining competence assessment are summarized in this section. First, the relation of competence assessment to the overall learning process and what is actually meant by competence assessment were explained. The four-level taxonomy of training evaluation by Kirkpatrick (1996) was utilized for describing the relation of competence assessment to the overall learning process. *Competence assessment* does not evaluate learning, but determines whether the individual has learned to apply his or her skills or knowledge in a problem solving situation in a given context. Assessing competence rather than knowledge items verifies that instead of merely knowing, the student has become competent in applying his or her knowledge and skills in practice (see for example Baartman et al., 2006; Deardorff, 2006; Fantini, 2009; Kaslow et al., 2007; Krajewski, 2011; Leigh et al., 2007; Wolf, 2001). Hence, com-

petence assessment should be used as a tool for higher education to provide decision support for further learning and training needs.

Next, timing, methods of assessment, and how to choose a suitable assessment method were discussed. Developing competence is a prolonged process, and thus it should be assessed continuously during study years (Deardorff, 2006; Põldoja et al., 2011). Competence assessment is slowly emerging in education to promote the importance of lifelong learning (Paquette, 2007), however the assessment of globalization competence has not yet reached the IS domain (Deans & Loch, 1998; Pawlowski & Holtkamp, 2012). The methods used for assessing competence differ according to domain (Deardorff, 2009; Leigh et al., 2007) and thus flexible and adaptable methods are seen fitting for assessing a complex competence (Leigh et al., 2007) in an international setting (Fantini, 2009). Different types of competence assessment methods were divided into four categories in this work:

- Assessments measuring knowledge
- Assessments measuring decision making
- Assessments measuring performance and personal attributes
- Assessments measuring practice-based skills and tasks

Choosing an appropriate assessment method depends on the target, whether the aim is to assess knowledge, decision making, performance, personal attributes, or practical skills and tasks. A multimethod and multiperspective approach, which is integrated into the curriculum as a whole, should be used for assessing intercultural competence (Deardorff, 2009). According to Deardorff (2006), Leigh et al. (2007) and Fantini (2009), a blend of qualitative and quantitative methods is best used for assessing intercultural competence, and thus also globalization competence in the IS field. Diverse methods must be used when assessing the knowledge and abilities of individual students compared to groups of students. In the constructive part of this work, learning objectives from selected globalization competence categories are being matched with suitable assessment methods based on competence complexities. The scope of the matching is limited to *Collaboration and knowledge management* and *Intercultural competences*. Consequently, a revised version of the globalization competence assessment framework is constructed. All of these are covered in chapter five.

Finally, the currently used methods for assessing globalization competence in Finland were presented on the basis of my previous research (see Stén et al., 2012). It was concluded that the top three methods used for assessing globalization competence in IS courses in Finnish higher education institutions were orally examined (presentation) case studies, group work, and essays or short-answer questions in a final exam. The assessment methods in Finland are further compared with the methods used in Japan in the next chapter. This chapter ends the literature review part of this thesis. Next chapter begins the empirical part of this work by presenting the findings of current assessment methods used for assessing globalization competence in Japan.

# 4 ASSESSMENT METHODS IN JAPAN

A study comparing the current methods used for globalization competence assessment in Finland and Japan is conducted in this work. The methods used in Finland were presented in the previous chapter based on my past research. This chapter describes the methodology and results of the expert interviews on the current methods used for assessing globalization competence in the IS field in Japan. Ultimately, the methods are compared in the final section.

## 4.1 Description of the interview method

A semi-structured interview method was used to conduct the expert interviews. A qualitative research interview with a semi-structured nature has predetermined questions, but the order of answering is not definite and wording of questions can be modified during the interview based on the interviewer's sense of situation (Robson, 2002). Moreover, discussion around the topic was encouraged when appropriate. A semi-structured interview was chosen in order to adequately describe the reality and current state of globalization competence assessment in Japan. Furthermore, this qualitative interview will act as an exploratory basis for quantitative study in future research.

## 4.2 Sampling

The following criteria were used for selecting the respondents of the interview:

- A Japanese academic
- Teaching experience in a course/study module of IS
- Topic of the taught study module related to internationalization
- Availability at the local university (University of Jyväskylä)

An email inquiry was sent to six Japanese academics. Five of them agreed to participate and were chosen to be interviewed. All of the selected respondents fully matched the criteria, except one who had no teaching experience in IS but had taught classes in an Asian university. Regardless of one respondent not having teaching experience in the IS field, an interview was decided to be conducted in order to gain more general insights on assessment methods in Japan.

The timing of the interviews was convenient, as all of the respondents had a position of a visiting professor or research fellow at the University of Jyväskylä and were therefore available for the interview. All of the respondents were Japanese; four males and one female. The age breakdown of the respondents was 35-70. The institutions where the respondents originated from included Tokyo Institute of Technology, Keio University, Tokyo Seitoku University (with employment also at National University of Singapore and University of Jyväskylä), and Japan Science and Technology Agency.

## 4.3 Collection and analysis of data

A common set of questions was developed as a precept for conducting the interviews. The interview was tested with the supervisor and revised accordingly before the actual interviews. The interview consisted of nine questions divided into three themes admitting the respondents of sharing their insights on the 1) relevance and importance of globalization competences regarding their teaching, 2) current assessment methods in Japan and of their courses, in addition to 3) future possibilities of assessment. The questions acted in a guiding manner in order to spur discussion around the interview themes allowing the respondents to further elaborate their answers. Outline of the interview can be found from APPENDIX 1. The interviews spanned between 16 and 20 minutes. The respondents were given a chance to familiarize themselves with the questions in advance by sending the interview document to them by email. All of the interviews were carried out in English.

The purpose and structure of the interview and a short introduction to the research topic were presented at the beginning of each interview to ensure that the respondents were on the same level of understanding on the interview topic. This was done particularly because English was used as the interview language and it was neither the mother tongue of the interviewer nor the respondents. The respondents were encouraged to spontaneously express their own insights and ideas throughout the duration of the interviews, which stimulated a number of very interesting discussions. Furthermore, the respondents were informed on the confidentiality and anonymity of the interview and its results.

All the interviews were recorded and transcribed. The transcripts were not written completely verbatim because of expressions that could not be interpreted. Nevertheless, only expressions that did not hinder the understanding and precise expression of the respondents' opinions were omitted. Finally, the tran-

scripts were sent to the respondents giving them a chance to make corrections in order to confirm the correct interpretation of their opinions.

## 4.4 Results of the Japanese expert interviews

This section presents the results of the expert interviews. After receiving the verifications of the transcripts and required corrections were made, the interviews were analyzed in addition to highlighting interesting quotes on selected topics. In quoting respondents are referred to as R1-R5 (*R=respondent*) for anonymity reasons. Next, the results of the interview questions are presented theme by theme; relevance of globalization competences, current assessment methods and future possibilities.

### 4.4.1 Relevance of globalization competences

First, the academics were asked to describe a course they have taught to confirm whether the course in question is suitable for the interview. The respondents were encouraged to concentrate on a course related to internationalization or globalization issues. Topics of the courses included development of rural telecommunications, design thinking and corporate strategy, design of technologies, and institutional innovation. Some of the courses required either understanding on how to utilize ICT in the development process or the actual design of a prototype, whereas other courses covered issues more related to humane or economic aspects of technology.

Next, the relevance and importance of globalization competences regarding the presented courses was discussed. The most of globalization competences were considered relevant to the courses, although of varying degree of importance. Particularly *Collaboration and knowledge management*, *Communication* and *Culture* categories were regarded as important, and on many courses this was addressed by organizing classes in English and conducting group assignments in multicultural student groups. However, defining important intercultural competences in the *Culture* category can prove to be more complex than presented in the internationalization competence framework (in TABLE 3), as pointed out by one respondent:

> R3: Difficult question, because the trick of my project is cultural translation. This means that misunderstanding sometimes is very important, because misunderstanding really tells the truth about communication. It's not so simple like this.

Being competent particularly means that the individual is able to solve a problem in a given context (European Communities, 2008; Pawlowski & Holtkamp, 2012). Intercultural competence requires situational awareness (Deardorff, 2006), and thus becoming interculturally competent undeniably depends upon making mistakes in intercultural circumstances and learning from them.

### 4.4.2 Current assessment methods

As the first topic of the second theme, a question of the most popular assessment methods in Japan was brought up. The answer was not seen as straightforward, but depending on the discipline, subject and whether the students to be assessed are on graduate or postgraduate level. The study was not a quantitative study, and hence the figures presented herein show merely a general idea on the issue. However, a first impression on the assessment methods in Japan based on the results of the interviews can be observed in FIGURE 7.

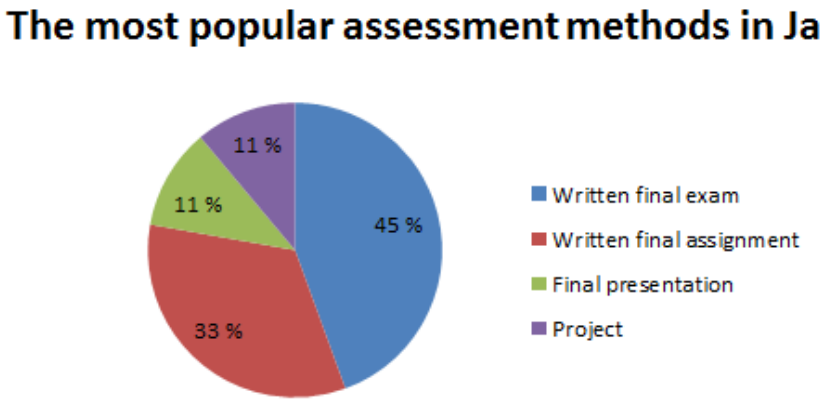


FIGURE 7 The most popular assessment methods in Japan

Written exams and assignments were considered the most popular assessment methods in Japan by the majority of the respondents. Written final exams would typically be executed as essays, while written final assignments could be in the form of essays or reports. Yet many of the respondents expressed their opinion that in Japanese education a shift towards assessment methods such as group work, case studies, seminars and fieldwork is occurring.

> R4: Traditionally written assignment was the most popular, and final exam. However, currently in such subject and grade the focus is shifting to case study and group work, and further some fieldwork assessment.

> R1: Some courses try to change the style, so adopt the group work, presentation, seminars or discussion in the team. Such a change is a very focus these days, because in Japan finding a job is getting difficult for university students, so the university courses try to offer more experiences in discussions and students thinking by themselves.

Furthermore, discussion on related topics was initiated. The differences between Japanese and Finnish education and students' behavior were discussed. In general, the respondents thought that Finnish students are very similar to Japanese in teaching situations.

> R2: Especially Finnish people are more like Japanese people. So in my experience, students from some countries (e.g. Chinese or African, etc.) are different from Japanese that they speak up more actively in class discussions. Finnish are the same than Japanese.
>
> R5: Actually, I was really impressed by the similarity rather than difference between Finnish and Japanese students. […] I have some experiences in the classes in the US universities, and so I got some prejudice that Japanese people are shy and students from other countries speak out. But when I came here, I was really impressed that Finnish people are also kind of quiet and possibly kind of shy, so I was really impressed by the similarity, rather than difference.

Also the Finnish education system in general was appreciated compared to the common Asian teaching style.

> R1: Well, Finnish education is very famous in the world, especially in primary schools. Maybe, due to the teachers giving students more opportunities to think by themselves, I think. Actually, in most Asian countries, in general classes, teacher gives a talk to one direction to the students, so most of the students sit and listen to the lectures. That style is not only in the primary school, but also in the higher education. It's a very popular style in Japan, as well as in other Asian countries.

Next, the respondents were asked to define the current assessment method(s) used in their courses. FIGURE 8 shows that, again, written exams and assignments are used often, yet final presentations or demonstrations are preferred over or alongside written form assessments on IS courses.

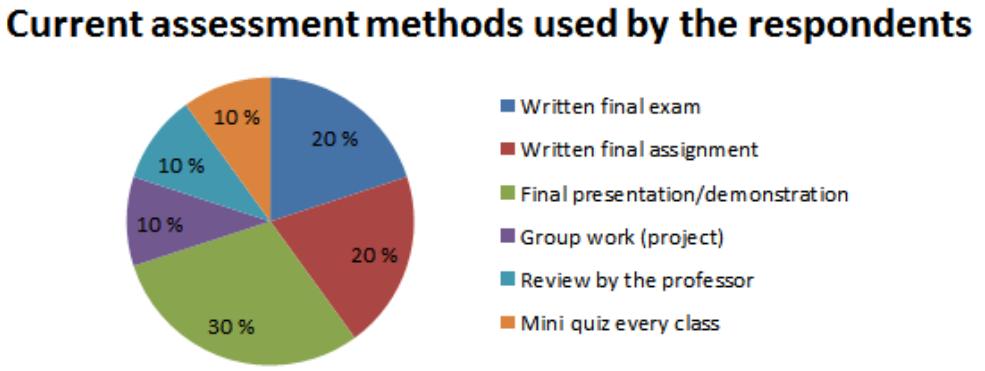


FIGURE 8 Current assessment methods used by the respondents in Japan

Final presentations were in most cases based on a case study or a project and presented individually or in a group. They were more often used as part of the evaluation together with a written assignment, but also as a single final assessment method of a course. Like discussed earlier in this work, presentations are suitable for assessing communication and interaction abilities as well as foreign language skills. What's more, when the presentation is executed as a group assignment, the internal group composition and task division within the group can be observed and evaluated, like one of the respondents denotes:

> R4: In the group presentation how to appear, in respective to the students' message to the audiences, and both the audiences and the students, how to react constructively are also points to be assessed. And also in the group presentation, the appropriateness of the group composition and the task sharing complementing respective comparative advantages and disadvantages are important.

Scholars have suggested that the best option for assessing intercultural competence is a mix of quantitative and qualitative methods (Deardorff, 2006; Fantini, 2009; Leigh et al., 2007). As far as globalization competences consist of both technical ICT knowledge and intercultural communication and collaboration skills, the assessment requires a combination of different types of methods. The importance of appropriate types of assessment methods for different kinds of abilities was also addressed by several respondents.

> R5: I would like to comment, that some courses should emphasize more on technology itself, or design methods, or more formal methodologies for ICT and also engineering. And for those, definitely, other ways of doing exam, like multiple-choice or short-answer questions are effective, because the knowledge or understanding of the important point is very essential for those kinds of systems.

Undoubtedly when assessing pure technical knowledge, factual concepts or understanding the methodologies of ICT, assessment methods such as exams with multiple-choice or short-answer questions are more effective than what is presented in FIGURE 8. However, it should be clarified that the courses discussed in the interviews were selected also the human or economic aspects in mind to match more closely with globalization competences. As a summary, many of the courses discussed used multiple assessment methods to evaluate both individual achievement and collaboration skills. The majority of the respondents were confident that the students are able to apply their competences after graduation assuming they get a postgraduate position on a suitable field or a job position matching their qualifications.

### 4.4.3 Future possibilities

Finally, the respondents were asked to share their future plans or ideas regarding assessment, first concerning improvements on their own teaching. Group learning method was considered by one respondent provided that the number of students in the course increases. Another respondent wanted to emphasize the evaluation of the learning process rather than mere outcomes of assessment:

> R5: I have some experiences in doing the group works in my graduate class in Tokyo Tech, and for the early years I might have focused more on the outcomes, outputs, or results. But these years I've also paid more attention, emphasis on how they work during the process of the group works, how they interact, and how they try to find the, let's say, real needs of the users or problems of the users, and how they try to address these issues. And, of course, I also look at the extent of their efforts.

The second question concerned the best way to assess students' competence required for operating in an international context in the IS field.

> R3: To make an international collaboration team is the way.

> R5: If you think about international competence, which may include the ability to international collaborations or to think about the acceptability of the international markets in various areas, various cultures, definitely communications or how to understand the users, people and cultures are very essential.

A consistent trend was found among the answers. It was agreed that the assessment should evaluate communication and collaboration skills with people from diverse cultures and with diverse perspectives. Clearly the best way to assess students' globalization competence according to the respondents was to execute a group assignment in a multicultural student group. This way the essential intercultural communication (especially language skill), group work and collaboration, presentation, and discussion abilities would be developed. In more detail, the best assessment methods for IS-specific knowledge would be written exams, reports, multiple-choice and short answer questions according to the respondents. However, intercultural communication and collaboration competence as well as understanding of diverse cultures, people and users are becoming increasingly important in Japanese education.

Ideally, the assessment of intercultural competence should be a lifelong process (Deardorff, 2006; Kaslow et al., 2007) and competence should be assessed multiple times during study years (Põldoja et al., 2011). Sadly in reality it is not the case, which one of the respondents also recognizes:

> R4: My principle idea is that educational system should be a lifetime educational system. […] Therefore, in such context we should assess whole lifecycle, similar to the lifecycle assessment in the environmental assessment. However, in reality that is institutional and whether that could be affordable or not is beyond my idealistic approach.

It remains to be seen to what direction institutional education systems change in the future and whether a lifelong assessment process includes in them. In conclusion, this interview study found out that the top three currently used assessment methods in IS courses of higher education in Japan are:

1. Final presentation/demonstration
2. Written final exam
3. Written final assignment

Next section summarizes and discusses the currently used assessment methods in Finland and Japan in more detail.

## 4.5 Analysis and summary

A discussion on the comparison between assessment methods in Finland and Japan is initiated in this section. Due to the terminology overlapping in the studies, some unification is conducted in the following to be able to present the assessment methods in a comparable form.

First worth simplifying are the different terms used for similar methods. In the Finnish study, "orally examined (presentation) case studies" could possibly be understood similar to "final presentation or demonstration" in the Japanese study. However, in the Japanese study the foundation of the final presentations was unknown (it could have been a case study or as well a group work), and on the contrary, in the Finnish study it was unclear if orally examined (presentation) case studies emphasized more the presentation or the case study part. Despite the confusion, the least that can be assumed is that both involve developing communication competences and presenting concepts to an audience. Hence "orally examined (presentation) case studies" and "final presentation or demonstration" are unified into "case study & presentation or demonstration" in the following summary.

Another issue is the number of terms used for defining written exams and assignments. In the Finnish study, the terminology was focused on the assignment type (essay or report), whereas in the Japanese study the same was expressed with merely "written". Written final assignments could thereby include essays, reports and other assignment types. Likewise, "essays (in final exam)" and "short-answer questions (in final exam)" in the Finnish study could be identified with "written final exam" in the Japanese study. Thus, the terms have been unified to match each other in the following summary.

After having unified the terminology between the two studies, a summary of the top globalization competence assessment methods used in Finland and Japan is presented in TABLE 6. Some of the methods were as popular as the other, and thus they are marked with the same ranking number.

TABLE 6 Top three assessment methods used in Finland and Japan

| **Assessment method** | **Finland** | **Japan** |
|---|---|---|
| Case study & presentation or demonstration | 1. | 1. |
| Group work | 1. | 3. |
| Written final exam (essay, short-answer questions, etc.) | 2. | 2. |
| Written final assignment (essay, report, etc.) | 3. | 2. |

What is worth noticing from the results of these two studies is that, in fact, there are not so many differences between the assessment method choices for IS courses in Finland and Japan. Case studies together with a presentation or a demonstration seem popular in both countries. Written assignments in the form of essays, reports or other types, and written final exams as essays or short-

answer questions are also used similarly in both Finland and Japan. However, larger scale empirical investigations have to be made in both countries with a unified terminology in order to provide further comparable studies. Even supposing there are some cultural differences between the countries, collaboration in the IS field seems promising. Interactional, creative and perhaps slightly more practical approaches such as role-playing situations, projects, meetings with companies, reviews by professors and fieldwork seem to be emerging, and it is recommended that new alternative assessment methods be increasingly utilized in IS courses in order to produce technically sound and globally competent graduates for the future.

The analysis and preliminary comparison of the assessment methods in Finland and Japan has showed similarity in practices in the IS field between the countries. Case studies and other types of group assignment methods seem to be used slightly more than written style assignments and exams in both countries. However, as argued earlier in this work, particularly for assessing *Collaboration and knowledge management* and *Intercultural competence*, authentic assessment scenarios must be created to offer students opportunities to solve real life problems and interact with multiple cultural backgrounds. Albeit not the most popular, yet written style assignments are much used for assessing globalization competence in both countries. Moreover, according to respondents from both Finland and Japan, case studies and other types of interactional group assignments could be the best ways to assess globalization competence. Despite the fact that the best way to assess globalization competence was acknowledged, such practices were not always implemented on courses. Therefore considering globalization competence assessment, room for improvement is in order.

Next chapter presents the revised globalization competence assessment framework, which offers support for decision making for instructors of higher education courses in the IS field. Method recommendations for assessing globalization competence are presented in addition to a spiral model for the assessment change process. A case study on a higher education IS course is then conducted in order to validate the suitability of the course assessment method for assessing *Collaboration and knowledge management* and *Intercultural competences* in the subsequent chapter.

# 5 GLOBALIZATION COMPETENCE ASSESSMENT

Assessing the competences required for effective operating in an international environment is not a simple task. The methods vary according to the competence being assessed and thus combining domain-specific and intercultural competences poses a challenge for assessment: How to assess domain-specific competences in conjunction with intercultural competences, when both require different assessment methods? More attention should be paid to assessing competence elements of diverse complexities in their authentic context instead of evaluating individual aspects of competence by single assessment methods (van der Vleuten & Schuwirth, 2005).

In this work, an attempt is made at developing the assessment of globalization competence by proposing changes to the assessment culture. I created a preliminary globalization competence assessment framework as my bachelor's thesis a year earlier. The framework matched globalization competences with suitable competence assessment methods (Stén et al., 2012). The framework is being revised in this work due to the need for improving the IS globalization curricula as showed by the study on current state of globalization competence assessment in the IS domain in Finland and Japan, which was presented in the previous chapter. Taking into account the length limitation of this thesis, particularly the categories of *Collaboration and knowledge management* and *Culture* from globalization competences are taken into more detailed scrutiny in order to discuss the assessment of combined competences in the first section. The improved globalization competence assessment framework is introduced together with the assessment change process in sections two and three.

## 5.1 Assessment of combined competences

An essential part of this work is to develop a scenario for the assessment of combined competences. Particularly in the domain of medical education, advancements have been made from assessment by a single instrument towards

an educational design problem encompassing the entire curriculum (van der Vleuten & Schuwirth, 2005). Similar to medical education, likewise the assessment of globalization competence in the IS field addresses complex competencies and thus requires a blend of methods providing both quantitative and qualitative information from different sources. An adequate assessment program integrates several competence elements and thereby requires input from a selection of judges, instruments and contexts to evaluate those elements on multiple occasions using credible standards (van der Vleuten & Schuwirth, 2005).

Several studies have indicated the complexity of IS competences (see for example Grant & Young, 2010; Pawlowski & Holtkamp, 2012).

> A competence may be made up of a number of sub-competences, for example, competence in a foreign language requires the separate skills of understanding written or spoken text and constructing written or spoken responses; these can be represented through the use of multiple linked elements. (Grant & Young, 2010, p. 3)

Moreover, the study of Pawlowski & Holtkamp (2012) showed that competences were not categorizable in many cases, but could be conceptualized as cross-category competences combining elements from multiple categories.

> The identified competences are additionally not on an atomic detail level, meaning addressing just one specific aspect. Instead they are combinations of atomic competences addressing several aspects such as the ability to adapt and adjust strategies, goals and plans according to the situation. (Pawlowski & Holtkamp, 2012, p. 3)

In the following, the most important abilities of the selected *Collaboration and knowledge management* and *Culture* competence categories as identified by the research of Pawlowski & Holtkamp (2012) are presented.

**Collaboration and knowledge management competence** (Pawlowski & Holtkamp, 2012, p. 8)

1. Ability to build national and international relationships and networks on a professional level
2. Ability to share information and knowledge with the team
3. Ability to collaborative problem resolution
4. Ability to understand other people's perspectives, needs and values

**Intercultural competence** (Pawlowski & Holtkamp, 2012, p. 8)

1. Foreign language skills (e.g. English)
2. Understanding the influences and implications culture has in work life
3. Ability to adjust to different cultures
4. Ability to evaluate perspectives, practices and products from multiple cultural perspectives

Abilities from these two categories were chosen to be combined especially because of their timely nature – good collaboration and information sharing abilities are vital in an intercultural context in order to perform effectively in today's globalizing world. Moreover, previous study had initially defined collaboration and knowledge management abilities internationalizable if not already internationalized (Pawlowski & Holtkamp, 2012) and thus they are seen appropriate to be combined with intercultural abilities. As an instance, assessing collaboration abilities in a globally distributed project requires the assessment of both collaboration and intercultural competence elements. *The ability to collaborative problem resolution* is the first element and can be assessed by, for example, a case study method in a group. The second element considers intercultural communication, such as *the ability to evaluate perspectives, practices and products from multiple cultural perspectives*, assessed by a written assignment. Combining these two elements forms yet a new competence: the ability to collaboratively solve a problem in a multicultural context. In order to face the challenge of assessing combined competences, an authentic problem-solving scenario needs to be created.

In this work, competence is defined as "a collection of skills, abilities, and attitudes to solve a problem in a given context (Pawlowski & Holtkamp, 2012, p. 2)." Globalization competence thereby embodies the skills, abilities and attitudes to solve problems in an international context in the IS field. According to Paquette (2007), such competence requires both general competencies that are shared with other fields and more specific competencies for domain-specific tasks, contexts and problem solving. His competency ontology states that:

> Competencies serve to annotate resources, human as well as media resources, giving them a semantic meaning as to the knowledge and skills they own or contain. These annotations can represent prerequisites to achieve a task, or to be attained as a result of a task. (Paquette, 2007, p. 9-10)

The ontology presents competencies comprising of a single *competency statement*, exactly one *generic skill* and at least one *knowledge entity*. A simply worded competency statement explains how the generic skill is applied to the knowledge. The knowledge entity can be a concept, a procedure, a principle or a fact selected from the specific domain, while the generic skill is a process described as an action verb, for example to perceive, memorize, assimilate, analyze, synthesize or evaluate knowledge items. (Paquette, 2007.) Then generic skills are divided into four levels (*Self-manage* being the most advanced level) and once more into ten more specialized processes based on their complexity (Paquette, 2007, 12):

**Receive**

1. Acknowledge
2. Integrate (identify or memorize)

**Reproduce**

3. Instantiate/Specify (illustrate, discriminate or explain)
4. Transpose/Translate
5. Apply (use or simulate)

**Produce/Create**

6. Analyze (deduce, classify, predict or diagnose)
7. Repair
8. Synthesize (induce, plan or model/construct)

**Self-manage**

9. Evaluate
10. Self-control (initiate/influence or adapt/control)

The complexity levels based on Paquette's (2007) study are herein applied to the selected globalization competences. TABLE 7 shows the estimated complexity levels of *Collaboration and knowledge management* and *Intercultural competences*.

TABLE 7 Complexity levels of selected globalization competences

| Category | Competence definition | Complexity (1-10) |
|---|---|---|
| Collaboration and knowledge management | 1. Ability to build national and international relationships and networks on a professional level | 8 |
| | 2. Ability to share information and knowledge with the team | 4 |
| | 3. Ability to collaborative problem resolution | 7 |
| | 4. Ability to understand other people's perspectives, needs and values | 6 |
| Culture | 1. Foreign language skills (e.g. English) | 4 |
| | 2. Understanding the influences and implications culture has in work life | 6 |
| | 3. Ability to adjust to different cultures | 10 |
| | 4. Ability to evaluate perspectives, practices and products from multiple cultural perspectives | 9 |

For example, if an individual demonstrates a complexity level eight ability, then he or she is able to manage all the lower levels (1-8) as well. The assessment of combined competences is further demonstrated and examined in the case study of this work. The case study is presented in the subsequent chapter. Next, a revised version of the globalization competence assessment framework is presented. In particular, assessment methods for the focus area competences of this work are recommended.

## 5.2 Globalization competence assessment framework

A second version of the globalization competence assessment framework, adapted from my previous work (Stén et al., 2012) is presented in this section. The framework is developed iteratively and is scheduled to continue also in future research. However, for now, several changes in categorization and definitions of the assessment methods have been made. The following TABLE 8 introduces a new way of classification for the assessment methods that is based on the categorization of methods from the health care sector (Leigh et al., 2007) and has been herein adapted to match the needs of higher education in the IS field. Each assessment method is complemented with estimation on its complexity level according to Paquette's (2007) competency ontology. The higher the estimation, the more complex problems can be assessed by the method. Afterwards, the selected globalization competences are matched with assessment methods by way of the complexity levels.

TABLE 8 Tray of competence assessment methods and their complexity levels

| | |
|---|---|
| **Assessing knowledge**<br>• Written assignment (4)<br>  o Essay<br>  o Report<br>  o Learning diary<br>• Final exam (4)<br>  o Essay<br>  o Short-answer questions<br>  o Multiple-choice questions | **Assessing decision making**<br>• Case study (8)<br>• Self-evaluation (10)<br>  o Learning diary<br>• Live interactions (10)<br>  o Meetings and events with companies<br>  o Project |
| **Assessing performance and personal attributes**<br>• Feedback assessment (8)<br>  o Observer assessment<br>  o Peer assessment<br>• Global ratings (9)<br>  o Behavioral Rating Scale<br>• Presentation (5) | **Assessing practice-based skills and tasks**<br>• Role-playing situations (10)<br>• Computer simulations (5)<br>• Live interactions (10)<br>  o Meetings and events with companies<br>  o Project<br>  o Internship |

Unlike in past research (Stén et al., 2012), group work was excluded as a method from the tray of competence assessment methods (TABLE 8) to avoid confusion in the conceptualization of methods. Several assessment method types, such as case studies, projects, presentations, and role-playing situations can be implemented as group work assignments. Thereby teachers responsible for implementing courses are instructed to first choose an assessment method to suit their course and learning objectives, and then decide if the desired learning outcomes require group interaction or can be implemented as individual assign-

ments. Moreover, learning diaries can be utilized as either knowledge acquirement assessments by reflecting the study topic, or self-reflection to improve personal development and learning, and are therefore included in both categories of *assessing knowledge* and *assessing decision making*. TABLE 9 lists down the changes in terminology compared to the previous version of the framework (see Stén et al., 2012).

TABLE 9 Adjustments in terminology regarding the new version of the framework

| **Terminology before** | | **Terminology after** |
|---|---|---|
| Written vignettes | → | Case study |
| 360° assessment | → | Feedback assessment |
| Candidate reports | → | Self-evaluation |
| Essay | → | Written assignment |
| Multiple-choice/short-answer questions | → | Final exam |
| Live client situations | → | Live interactions |

Written vignettes are short descriptions or episodes on a certain topic (Oxford Dictionaries, 2010c). This term was used in the original categorization of assessment methods from the health care sector (Leigh et al., 2007) but appeared to be unfamiliar to IS academics (Stén et al., 2012) and therefore the term in the framework was changed to case study. 360° assessments were likewise more unknown as a term and were changed to feedback assessments, covering both peer and observer (e.g. instructor of the course) assessment types. Candidate reports as a term did neither seem to fit the IS domain and were thereby replaced with the term self-evaluation. Essays, multiple-choice/short-answer questions and live client situations were merged together with other similar assessment types respectively, and thus can include different types of methods (e.g. written assignments can refer to essays, reports or other types of texts).

Next, the revised globalization competence assessment framework (TABLE 10) presents assessment method recommendations for the selected globalization competences according to their complexity levels. Due to the length limitation of this thesis, only the competence categories of *Collaboration and knowledge management* and *Culture* are tackled thus far.

TABLE 10 Globalization competence assessment framework

| **Category** | **Competence description and complexity** | **Assessment method** |
|---|---|---|
| Collaboration and knowledge management | Ability to build national and international relationships and networks on a professional level (8) | • Live interactions (10)<br>• Role-playing situations (10)<br>• Case study (8) |
| | Ability to share information and knowledge with the team (4) | • Live interactions (10)<br>• Feedback assessment (8)<br>• Case study (8) |

(continued)

| | | |
|---|---|---|
| TABLE 10 (continued) | Ability to collaborative problem resolution (7) | • Live interactions (10)<br>• Case study (8)<br>• Role-playing situations (10) |
| | Ability to understand other people's perspectives, needs and values (6) | • Live interactions (10)<br>• Case study (8)<br>• Role-playing situations (10) |
| Culture | Foreign language skills (e.g. English) (4) | • Written assignment (4)<br>• Final exam (4)<br>• Presentation (5) |
| | Understanding the influences and implications culture has in work life (6) | • Self-evaluation (10)<br>• Feedback assessment (8)<br>• Live interactions (10) |
| | Ability to adjust to different cultures (10) | • Live interactions (10)<br>• Role-playing situations (10)<br>• Self-evaluation (10) |
| | Ability to evaluate perspectives, practices and products from multiple cultural perspectives (9) | • Self-evaluation (10)<br>• Live interactions (10)<br>• Role-playing situations (10) |

TABLE 10 matches the selected globalization competences with suitable assessment methods based on the estimation of their complexity levels. Each competence element is suggested three assessment methods covering the complexity requirement. Depending on the resources, time, topic of the course and whether individual or group assessments are planned, instructors are free to choose any of the suggested methods. The next chapter attempts to validate the use of the framework in a real life scenario as a case study. However, first the assessment change process is discussed in the following section.

## 5.3 Assessment change process

Adding an internationalization aspect to a course does not happen overnight, but instead it is an ongoing process. This section presents a spiral model (FIGURE 9) as an instrument of aid for teachers who plan to integrate an internationalization aspect to their course and offers guidance on how to utilize the globalization competence assessment framework. The model assumes that an internationalization aspect is desired to be integrated on the course, and thus rules out cases where an internationalization aspect is not sought after in the course implementation. However, the aforementioned is a matter of future research and is thereby excluded from this work.

The model presents three iterating steps to develop a course wherein each step is going through four phases; analysis, proposal, adoption, and validation. Moreover, each step presents one course implementation, and therefore it may take several course implementations to achieve the desired level of globalization competence assessment. The spiral aims at achieving as authentic assess-

ment scenario as possible in order to assess globalization competence as realistically as potential. The steps are explained in more detail in the following.

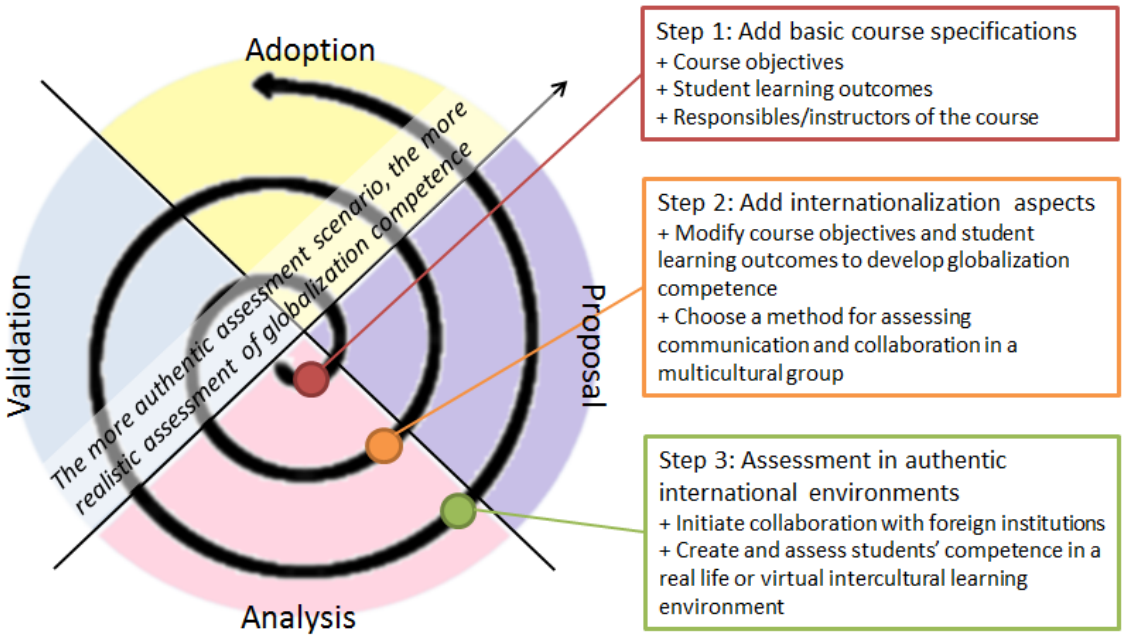


FIGURE 9 Spiral model of adding an internationalization aspect to a course

**Step 1**

Establishing clear and measurable outcomes of student learning is the key for quality assessment (Suskie, 2009). Learning goals must be established first in any assessment process, and therefore the basic assessment specifications, such as the course objective, student learning outcomes, and responsible of the course are determined in the first step. A well-written plan before the course eases the assessment process later on. Creating an assessment plan is helpful in making sure that the right competences are being assessed and that the assessment process is being followed up on. TABLE 11 shows a sample assessment plan to be completed by the responsible of the course prior to execution of the course.

**Step 2**

The second step of the cycle is executed after the basic specifications of the course are decided. On the second step the internationalization aspect is integrated into the course organization and a suitable assessment method chosen accordingly. New courses continue to step two from the first step, but also existing courses can join in the cycle at step two in order to add an internationalization aspect to future course implementations. Recommendations for suitable assessment methods for assessing different globalization competences were discussed in chapter three.

TABLE 11 Sample assessment plan (adapted from Deardorff, 2009)

| Course name: Name of the course or study module | |
|---|---|
| **1. Purpose of the assessment:** Listing the globalization competences (abilities, knowledge, skills, etc.) which are to be assessed, but can also be a bigger picture of the aims of the teaching. | |
| **2. Course objectives** | Describing the intended results or consequences of the course. Objectives are more focused on specific types of performances the students are expected to demonstrate at the end of instruction. They are often written more in terms of teaching intentions and typically indicate the subject content the teacher intends to cover. |
| **3. Learning outcomes** | Listing the learning outcomes students are expected to demonstrate at the end of the course. They are student-centered and describe specifically what a student should know, understand, or be able to do at the end of the course. Learning outcomes can be a component of globalization competences, and therefore purpose of the assessment can be elaborated as consisting of several learning outcomes. |
| **4. Assessment methods and what they measure** | Determining the assessment methods needed to assess the listed competences. Choosing the right assessment method is discussed in chapter three and recommended methods for assessing globalization competences were presented in the previous section.<br>For instance: |
| | <u>Method 1 for group work</u><br>• Task: Describe in detail.<br>• Measures: Which competences are measured? |
| | <u>Method 2 for individual assessment</u><br>• Task: Describe in detail.<br>• Measures: Which competences are measured? |
| | <u>Surveys to determine competence levels</u><br>Self-assessment surveys at the beginning and end of the course increase the students' awareness of their personal growth and can therefore enhance their learning.<br>• Assessment survey is conducted prior to the course to determine competence levels of students.<br>• Self-reflecting survey shall be conducted after the course to review competence development. |
| **5. Timing** | Scheduling the assessments (if multiple) for the duration of the course. Timing of the assessment is further discussed in chapter three. |
| **6. Shared responsibility for implementation** | Listing the responsible, instructors or teachers and other people required for the implementation of the course. |
| **7. Planned use of data from methods** | Determining the use of data gained from the assessments, for example students' competence development or future improvements of the course. |

**Step 3**
On the third and most advanced step courses aim to create real lifelike international and multicultural environments for students to develop their globalization competence. Collaboration with foreign institutions could be implemented on the course, for example doing a group assignment in multicultural virtual teams as e-learning. The more real life scenarios can be created, the more accurate are the assessment results of students' globalization competence.

# 6 CASE STUDY: TESTING THE FRAMEWORK ON A COURSE

The primary aim of this research is to develop the globalization competence assessment framework. In order to validate the proposed framework, a small-scale case study is conducted. The case study validates the proposed framework by testing it in a real life scenario on a Finnish higher education course of IS and by acquiring opinions from the students of the course and academic opinions from selected experts in the IS field. Due to time limitations, the framework was initially demonstrated merely in a Finnish context. Nevertheless, since the scope of this work is both Finland and Japan, a study in a Japanese scenario is conducted in future research. Description of the case study method, course profile, the proposed change process for the course, participants, and collection of data are presented in the following sections.

Two aspects are validated in this case study, and thus the case study includes two parts. First off, the students' point of view is tested – whether the students feel they have developed the goal competences during the course or not. Students are asked to fill in a two page survey as a self-evaluation on their competence and what they think will be developed during the course. A survey will be filled in both in the beginning and at the end of the course in order to enable comparability of perceived competence development of the students. Moreover, their thoughts on the assessment method of the course are inquired.

Secondly, from the academic point of view – how the framework can improve course implementation and assessment. A set of proposals for improving the course is presented and the instructor of the case course gives feedback at the end of the course. The instructor will be interviewed on the usefulness and usability of the framework, globalization competence assessment in general and practical use of the framework. Additional interviews will be conducted to a selection of academics in the IS field to discover an external point of view on the usefulness and future aspects regarding the framework and globalization competence assessment. However, the validation on the educational aspects is done on a very general level merely to show the extremities (e.g. what would happen if there was no globalization competence assessment at all).

## 6.1 Description of the case study method

A case study method has been chosen as the research method for validating the proposed framework in an authentic scenario. Multiple scholars have defined the case study method as an empirical investigation studying a contemporary phenomenon in its real life context (Robson, 2002; Runeson & Höst, 2009; Yin, 2003). The case study method was preferred over other methods because a method for explaining the use of the framework in an authentic situation was required. Multiple sources of evidence are typically used (Robson, 2002; Yin, 2003), and thus the implementation of the case study includes surveys and interviews as a data collection methods. Student feedback is collected in the form of a survey. Semi-structured interviews are conducted to the course instructor and a selection of academics of the related domain in order to validate the framework from the teacher's point of view. Quantitative as well as qualitative data is collected through both surveys and interviews. Case studies can be used to explain, describe, explore, and improve different types of phenomena (Robson, 2002, Yin, 2003). The nature of this case study is mainly descriptive regarding the use and validity of the framework in a real life scenario, but also explorative and seeking new insights and ideas for future research improvements.

## 6.2 Course profile

Due to a suitable topic and a group of multicultural participants, the course *Global Knowledge Management* (GKM) was chosen as the context of this case study. The course is aimed at master's degree students of IS and approximately 30 students participate the course in the fall semester. This was considered a timely and apposite opportunity for testing and validating the globalization competence assessment framework in a real life scenario as well as studying the current competence levels of the selected sample of IS students. TABLE 12 introduces the course profile including a short summary on the objectives, competences developed through the course and the assessment method.

The course *Global Knowledge Management* is obviously aimed at developing a variety of collaboration and knowledge management as well as intercultural competences, for instance the abilities to:

- share knowledge and information with the team
- solve problems collaboratively
- understand other people's perspectives, needs and values
- language skills
- understand the influences and implications culture has in work life
- evaluate different factors from multiple cultural perspectives

TABLE 12 Course profile for the Global Knowledge Management course (Pawlowski, 2012)

| |
|---|
| **Name:** Global Knowledge Management |
| **Summary:**<br>This course will discuss the integration of concepts, processes, and systems of knowledge management and e-learning in a global context.<br>• How can business processes be integrated with learning and knowledge processes in a multinational environment?<br>• How can processes be designed to integrated knowledge management and e-learning?<br>• How to design systems and interfaces for an integrated knowledge and learning system?<br>• How to successfully act in global organizations, projects and teams?<br>Consequently, the course takes a broad view of the subject, covering communications, information management, tools, and knowledge management capability as well as knowledge management success factors. We will focus on knowledge in a variety of organizational contexts ranging from virtual, project, multinationals, small and medium-sized businesses to the public sector. In an increasingly interconnected world, knowing how to manage and measure integrated knowledge management processes to meet new opportunities and challenges is becoming a growing priority. The main objective of the course is to explore the activity of managing knowledge and learning processes from different perspectives, providing you with conceptual frameworks and models, practical management tools and guidelines. |
| **Competencies:**<br>After this course, students will be able…<br>• to examine different types of knowledge, e.g., explicit, tacit and process knowledge, and their relevant characteristics for Knowledge Management;<br>• display their understanding of the field of knowledge management and its relevance for organizational performance;<br>• develop a critical perspective on communication, ICT, and learning;<br>• design and develop integrated processes including business, learning, and knowledge processes, even in a global context;<br>• examine tools and techniques for efficiently managing different types of knowledge and guidance on how to make the right selection;<br>• identify and develop tailored success factors and performance indicators;<br>• apply culture models to and identify cultural aspects in knowledge management problems<br>By the end of the course you will be more sensitive to knowledge management issues. The benefits to you include that you will be able to formulate, implement and measure integrated knowledge management and e-learning solutions. |
| **Assessment method:** Case study (including final report and presentation) |

A case study complemented with a final report and a presentation is conducted in a group. The learning goals of the course were introduced in TABLE 12. Matching them with the focus areas of this work – *Collaboration and knowledge management* and *Intercultural competences* – is done in the following. TABLE 13 presents how the development of the desired globalization competence areas is addressed in the GKM course.

TABLE 13 Globalization competence development addressed in the GKM course

| Goal globalization competence | How globalization competence development is addressed on the course? |
|---|---|
| **Collaboration and knowledge management competence** | |
| Ability to share information and knowledge with the team | *Learning basic concepts of knowledge sharing and management:*<br>• Examine different types of knowledge, e.g., explicit, tacit and process knowledge, and their relevant characteristics for Knowledge Management<br>• Display understanding of the field of knowledge management and its relevance for organizational performance<br>• Examine tools and techniques for efficiently managing different types of knowledge and guidance on how to make the right selection |
| Ability to solve a problem collaboratively | *Working in a group to achieve solution:*<br>• Identify and develop tailored success factors and performance indicators |
| Ability to understand other people's perspectives, needs and values | *Interacting with multiple cultural backgrounds:*<br>• Develop a critical perspective on communication, ICT, and learning |
| **Intercultural competence** | |
| Language skills (e.g. English) | • *Working in a multicultural group*<br>• *Producing a final report in English*<br>• *Presenting the final work in English* |
| Understanding the influences and implications culture has in work life | *Learning how culture affects process design and development:*<br>• Design and develop integrated processes including business, learning, and knowledge processes, even in a global context |
| Ability to evaluate perspectives, practices and products from multiple cultural perspectives | *Learning about culture models and different perspectives:*<br>• Apply culture models to and identify cultural aspects in knowledge management problems |

Basic concepts on knowledge management and sharing are introduced together with examining its relevance to organizational objectives. Further, different types of knowledge management tools are analyzed on the course. All of the aforementioned contribute to developing the *ability to share knowledge and information with the team* by offering the basic building blocks for the students to utilize in their group assignment. Not only are the students provided with information on knowledge management in an organization, they are also provided with an opportunity to exercise their knowledge sharing skills in the group assignment. The *ability to solve problems collaboratively* is trained in the case study group work by identifying and developing tailored solutions for knowledge management. Moreover, the students develop their *ability to understand other people's perspectives, needs and values* when interacting with multiple cultural backgrounds in the group assignment.

Naturally, when attending a course taught in English with students from multiple cultural backgrounds, *language skills* of a non-native English speaker

develop. Listening, reading, writing and speaking skills each are practiced throughout the course in the case study, operating in a group, as well as participating in the lectures. Students also cultivate their *understanding of the influences and implications culture has in work life* through designing and developing integrated processes for working in an international environment with diverse cultures. Finally, by applying culture models introduced in the course and identifying different cultural aspects in knowledge management problems students are able to develop their *ability to evaluate different factors from multiple cultural perspectives*. As a conclusion, the course and its assessment methods seem appropriate for developing *Collaboration and knowledge management* as well as *Intercultural competence* of students in the IS field. Nonetheless, some new ideas for improvement and clarification are presented in the next section.

## 6.3 Change process and amendments

This section presents proposals for developing the course assessment practices from the teacher's point of view by offering a detailed description of a change process. Steps 1-3 of the change process are modeled according to the spiral model (FIGURE 9) suggesting amendments for developing the course.

**Step 1: Add basic course specifications**
Following is a suggestion for an assessment plan for the course *Global Knowledge Management* (TABLE 14):

TABLE 14 Assessment plan for Global Knowledge Management

| Course name: Global Knowledge Management | |
|---|---|
| **1. Purpose of the assessment:** To develop globalization competence of students:<br>• Collaboration and knowledge management competence<br>• Intercultural competence | |
| **2. Course objective** | The main objective of the course is to explore the activity of managing knowledge and learning processes from different perspectives, providing students with conceptual frameworks and models, practical management tools and guidelines for effective knowledge management in a global context. |
| **3. Learning outcomes** | Students will be able to…<br>• examine different types of knowledge, e.g., explicit, tacit and process knowledge, and their relevant characteristics for knowledge management<br>• display their understanding of the field of knowledge management and its relevance for organizational performance<br>• develop a critical perspective on communication, ICT, and learning |

(continued)

| | |
|---|---|
| TABLE 14 (continued) | • design and develop integrated processes including business, learning, and knowledge processes, even in a global context<br>• examine tools and techniques for efficiently managing different types of knowledge and guidance on how to make the right selection<br>• identify and develop tailored success factors and performance indicators<br>• apply culture models to and identify cultural aspects in knowledge management problems |
| **4. Assessment methods and what they measure** | Case study<br>• Task: Students are given a practical work task to solve a knowledge management related problem in a multicultural organization. The case study is to be done in a (preferably) multicultural group.<br>• Measures:<br>o Ability to share information and knowledge with the team<br>o Ability to solve a problem collaboratively<br>o Ability to understand other people's perspectives, needs and values<br>o Language skills (spoken English) |
| | Written assignment (report)<br>• Task: Each student shall contribute to writing a final report of the case study. The contributions of each student shall be strictly determined in the report in order to be able to assess the competence of individuals. Alternatively, each student writes his or her own report.<br>• Measures:<br>o Language skills (written English)<br>o Understanding the influences and implications culture has in work life<br>o Ability to evaluate perspectives, practices and products from multiple cultural perspectives |
| | Continuous assessment<br>• Assessment survey is conducted prior to the course to determine competence levels of students.<br>• Instructor of the course observes the students' performance continuously in the class.<br>• Self-reflecting survey shall be conducted after the course to review competence development. |
| **5. Timing** | • Case study commences at the beginning of the course.<br>• Report shall be returned 2 weeks after the end of the course.<br>• Surveys prior and after the course. |
| **6. Shared responsibility for implementation** | • Instructor of the course |
| **7. Planned use of data from methods** | • Providing feedback to…<br>o Students of their competence development (grading).<br>o Course instructor for future improvements. |

The course aims at developing mainly collaboration and knowledge management, and intercultural competence of students. However, aspects of communication competence can also be enhanced during the group assignment, such as *communicating sensitively taking into account other personalities and cultures* and *communicating clearly and articulately*, but are not officially assessed on this course. Language skills (spoken and written) are not evaluated like in actual language courses, but they are listed in the assessment plan as the assessment methods of this course enhance their development. Likewise, written assignments alone may not be sufficient for assessing the abilities *to understand the influences and implications culture has in work life* and *to evaluate perspectives, practices and products from multiple cultural perspectives* entirely. However, a written style assignment is considered to compliment other assessment methods, and thus is suitable for assessing globalization competence herein. The main goal of the course is to introduce the concepts of knowledge management and learning processes providing students with sufficient knowledge on knowledge management, its tools and models to be utilized in a global context. Learning outcomes are sufficient and apposite, however, some clarifications regarding their wording are recommended.

*Proposal 1: Clarify student learning outcomes.*

Some learning outcomes are unclear. For example: *"Develop a critical perspective on communication, ICT and learning."* It is unclear what is meant by a critical perspective. In order to learn and develop, the learning statements should be simple and easy to understand for everyone. As another instance: *"Identify and develop tailored success factors and performance indicators"* Herein it is unclear what is meant by developing success factors. This learning outcome could be also clarified. Furthermore, there should be only one clear main goal worded with a verb, which produces a concrete outcome. As it is, there are many goals with such wording: *"Design and develop…"*, *"Identify and develop…"* and *"Apply…"* Here the verbs design, develop and apply make the course seem large workload-wise. Taking into account the time limit and the main goal of the course, only one learning outcome with the words "design and develop" could be stated.

**Step 2: Add internationalization aspects**

Sufficient learning opportunities to develop globalization competence are provided for the students on this course. Case study is used as the learning method. The course is taught in English, so it can be assumed that students of multiple nationalities attend the course and thereby make the learning environment multicultural. However, it is not stated whether the case study should be completed in a multicultural group or not.

*Proposal 2: Implement the case study as a group assignment in a multicultural group.*

What happens often is that students want to complete the group assignment with peers of the same nationality. Consequently, cultural misunderstandings are not given an opportunity to take place. Therefore, in order to truly enhance the development of intercultural competence, the students should be forced to work in a multicultural group if feasible considering the number of different nationalities of participants in the course.

Furthermore, in order to achieve the best possible results on student learning and competence development, the assessment should not only be done at the end of the study module, but also continuously during the course (Suskie, 2009). A final presentation and report are provided based on the case study at the end of the course, but continuous assessment is missing.

*Proposal 3: Conduct continuous assessment for the duration of the course.*

Continuous assessment can be implemented, for instance, as an observer assessment. Instructor of the course observes the performance of the students continuously in the class. However, this requires discussions or group work done in the class instead of at home. Surveys in the beginning and at the end of the course could be conducted in order to determine the competence levels of students and provide them with an opportunity for self-evaluation and reflection on their personal development.

*Proposal 4: Assess both group as well as individual performance.*

When conducting the case study as a group assignment, collaboration and team working skills are being assessed. However, also students' individual performance needs to be evaluated. The case study includes a final presentation and a final report. In order to assess also individual students' performance, the final report should clearly state which parts are done by which group member. Alternatively, another type of an individual assessment could be conducted, for example producing a learning diary (writing about personal growth in understanding global knowledge management). Further, students can be given an opportunity to give feedback to their peers on their performance during the case study at the end of the course which also assesses individual performance.

**Step 3: Assessment in authentic international environments**
An authentic international environment is herein defined as an actual foreign country or a virtual learning platform where students can cooperate with multiple nationalities in order to complete a group task.

*Proposal 5: Collaborate with a foreign university.*

In order to make the course even more intercultural, the group work could be conducted in cooperation with a partner university. However, this requires a

great deal more of planning and establishing partnerships on the university-level. A substantial amount of time and resources should be put to implementing this properly; hence it is seen best to be left for the future because of time limitations of the case study in this work.

## 6.4 Participants

As mentioned earlier, two aspects are validated in the case study – the student and the academic point of view. This chapter introduces the selected sampling of the case study, first the students and thereafter the academics.

In total 15 students completed both the beginning and end surveys. The participants included Finnish and international major students, as well as exchange students. 47% of the participants were Finnish, while other countries of origin included Argentina, Canada, China, Germany and Russia. One of the participants did not determine nationality. 73% of the participants were male and 27% female. The age of the participants was 26.5 years on average. All of the major subjects of the students fitted to the scope of the course, with majors including information systems science (40%), mobile technology (33%), IT (13%), software engineering (7%), and management information systems (7%). Regarding intercultural experience, 93% of the students had previously completed at least some studies related to internationalization issues, or had other intercultural experience such as student exchange or work abroad. When asked to describe their intercultural competence, all of the students provided positively confident responses regarding their intercultural competence. Such skills were mentioned as intercultural communication, understanding, adaptation, and awareness, as well as knowledge on different cultures and intercultural issues. Based on the background information it can be concluded that this group of students was a suitable sampling for the case study.

Next, the sampling of academics interviewed is presented. Four academics at the University of Jyväskylä were interviewed. The average age of the participants was 47.8 years. Three of the participants were Finnish and one was German. The academics were professors or project researchers (of which one had not yet defended their doctoral thesis) at the Department of Computer Science and Information Systems at the University of Jyväskylä. Thus, this sampling of academics was deemed suitable to provide their expert opinions on the topic and participate in the case study.

## 6.5 Collection of data

The case study includes multiple data collection methods, surveys for the students and interviews to the academics. Survey data was collected twice in order to compare students' perceived competence levels before and after the course.

The survey questionnaire contained a mix of questions providing both quantitative and qualitative data. The question types ranged from open-ended questions to 1-5 Likert-style rating scales, and multiple-choice questions. Both the beginning and the end surveys included ten questions. Abilities from three globalization competence categories were chosen to be evaluated in the case study; *Collaboration and knowledge management*, *Communication*, and *Culture*. Only the *Communication* category did not belong to the focus group of the globalization competences discussed in this work nor were there straightforward communication abilities listed in the learning outcomes of the case study course. However, the communication abilities were chosen as an extra category to evaluate if the students spontaneously felt developing communication abilities during the course. The surveys were conducted in the introductory and ending lectures of the GKM course. The course spanned from October 29th to December 18th in 2012, and thus lasted approximately seven weeks. The beginning and end questionnaires can be found from APPENDICES 2-3.

The aim of the academics' interviews was to find out the academic opinion on the need for globalization competence assessment, the globalization competence assessment framework, and its perceived usefulness for the future. The semi-structured interviews to the sampling of academics were conducted between December 13th and 22nd in 2012. The interview originally comprised eleven questions, but one of them was omitted during the analysis of the results due to the question being slightly off-topic. The questions were divided into three categories. Questions 1-4 were related to globalization competence assessment in general, questions 5-8 featured the globalization competence assessment framework, and the final two questions were directed only to the course instructor. The questions mainly functioned as guidelines for the respondents to speak out their opinions on the topic. However, some questions additionally asked for a 1-5 rating on the perceived usefulness and understandability (from the external academics), as well as the actual usability of the framework (from the course instructor). The interview document and a presentation of the topic were sent to the respondents in advance by email to offer them an opportunity to get accustomed with the topic prior to the interview. Three of the interviews were carried out in Finnish and one in English. The interviews spanned from 21 to 35 minutes. After having transcribed the interviews, selected quotes were translated into English (if it was necessary) and sent to the respondents for verification. The interview document can be found from APPENDIX 4.

# 7 RESULTS OF THE CASE STUDY

The case study was executed in two phases. First, the student point of view was investigated through surveys on an IS course which had an internationalization aspect. After the course was over, the academic point of view was analyzed from the results of interviews to the course instructor in addition to a selected group of IS academics. This chapter presents the results of the case study, first from the student point of view, and thereafter from the academic point of view.

## 7.1 Student point of view

Surveys in the beginning and at the end of the case study course were conducted to a multicultural group of students in order to discover their opinion on the course assessment method and monitor if the course developed their globalization competence. The results of the surveys are divided into three themes; students' perceived development of competence, actual development of competence, and opinions on the assessment method of the course. The results are presented in the following subsections.

### 7.1.1 Perceived actual development of competence

In the first survey students were asked to define which abilities of the globalization competence categories *Collaboration and knowledge management*, *Communication*, and *Culture* they think they will develop during the *Global Knowledge Management* course. As a follow-up for the first survey, the second survey asked to define which abilities the course did develop. In 70% of all the competence categories majority of students (over 50%) believed that they will develop an ability, but actually only the abilities *to listen to others and consider their thoughts* and *understanding the influences and implications culture has in work life* (20%) were rated to have developed after the course.

Specifically from the *Collaboration and knowledge management* category, 80% of the students thought that they will develop *the ability to share information and knowledge with the team* and 73% of the students estimated that they will develop *the ability to understand other people's perspectives, needs and values*. However, the corresponding number of students who did feel these abilities developed after the course was 60% and 53% respectively. In other words, the students were not completely aware in the beginning of the course what the course will be about. This could for example be due to students not understanding the written learning objectives and outcomes of the course or they were not presented clearly enough in the beginning. Learning is most effective when one is aware of the learning process, and thus the students should always be made aware of the learning objectives prior to the course.

### 7.1.2 Actual development of competence

The second theme of the student surveys presents the results of the actual self-judged development of competence. The students were asked to rate their competence (on a scale 1-5) in the selected globalization competence categories (*Collaboration and knowledge management*, *Communication*, and *Culture*) before and after the course. Interestingly, seven abilities (70%) in the globalization competence categories were rated having a lower skill after the course compared to prior to the course. It is difficult to give reasons to the aforementioned. One can only guess whether the students were completely exhausted from the course in the end survey situation or was the course executed poorly, thereby resulting in lower skill levels. Only three abilities (30%) showed positive change:

- Understanding the influences and implications culture has in work life (average rating 3,47 before and 3,73 after)
- Ability to evaluate perspectives, practices and products from multiple cultural perspectives (average rating 3,20 before and 3,40 after)
- Ability to communicate sensitively taking into account other personalities and cultures (average rating 3,53 before and 3,60 after)

Judging from the results it is noteworthy to observe that none of the abilities which the students thought they will develop from the *Collaboration and knowledge management* category showed a positive skill level rise during the course. Of the three abilities which showed positive change the first two were from the *Culture* category and the last one belonged to the *Communication* category. Comparing all of the perceived and actual developed abilities, only *understanding the influences and implications culture has in work life* was estimated to develop before the course, and did develop during the course. This ability also had the highest skill level increase (+0.26), followed by *the ability to evaluate perspectives, practices and products from multiple cultural perspectives* (+0.20) and *the ability to communicate sensitively taking into account other personalities and cultures* (+0.07).

### 7.1.3 Opinions on the assessment method of the course

In the third theme the students were asked to give their opinions on the assessment method of the course, which was case study. On a scale 1-5, the students rated the case study method on average 3.20 out of 5 for fitness for the course. 47% of the students gave the score 4; 27% scored 3; and likewise 27% gave the score 2. For assessing each selected globalization competence category, the scores for case study as the assessment method were:

- Collaboration and knowledge management: 3.47
- Communication: 3.53
- Culture: 3.47

The results indicate a mediocre suitability of the case study method for assessing these globalization competences. According to the globalization competence assessment framework presented earlier in this work, the case study method should be suitable for assessing specifically collaboration and knowledge management competence. However, the score 4 was given the most times for fitness of the case study method for the course, and thereby it can be considered an appropriate assessment method for the course in question.

The students were assigned to do a case study in a multicultural group during the course, and thus the communication and intercultural competences also developed through its execution. *Communication competence* was rated most fitting to be developed through a case study method, yet it also remained on the mediocre level. Furthermore, the *Communication competence* category was not a focus area of this work, and thus the suitability of different assessment methods is not argued herein. Developing *Intercultural competence* on the other hand is one of the focus categories in this work and was included in the learning outcomes of the course. Nevertheless, even according to the globalization competence assessment framework, the case study method is not one of the recommended assessment methods for intercultural competence. Instead, intercultural competence is recommended to be developed though assessment methods such as self-evaluation, live interactions, and role-playing situations. However, case study executed as a group assignment can be seen suitable for assessing intercultural competence, as it resembles interactional methods like projects and role-playing situations.

Despite of mediocre scores for the suitability of the case study method, merely 27% of the students thought that the case study could use some improvements or would change another assessment method for the course. Suggestions to improve the assessment of the course included incorporating a method for assessing individual learning, for example a learning diary, which could indeed be recommended according to the hypotheses presented in this work. A proportion of students also mentioned the group assignment being a good way of implementing the case study, but had trouble with their group mechanics.

## 7.2 Academic point of view

Expert interviews to a group of academics in the IS field were conducted to validate the framework in its current form. The aim of the interviews was to find out the academic opinion on the need for globalization competence assessment, the globalization competence assessment framework, and its perceived usefulness for the future. The questions are divided into three themes in the following. First, opinions on globalization competence assessment in general are presented, followed by opinions on the framework based on a short presentation as background information. All of the four respondents provided opinions on the first two themes. In the third subsection, the instructor of the course describes their impression on the usability of the framework. Respondents are referred to as P1-P4 *(P=participant)* in selected quotes for anonymity reasons.

### 7.2.1 Opinions on globalization competence assessment

First, the academics were asked if there is a need for more globalization studies in the IS field. Herein globalization studies are referred to as "studies that are developing students' competence in international environments." Three out of four respondents (75%) thought that without a doubt there should be more studies preparing students for the globalizing world in the IS domain. According to one respondent, for the moment most curricula address only local needs and there is room for improvement in the IS teaching:

> P4: Most curricula address purely local needs. In comparison to other fields like business and management this is underrepresented especially in teaching it is necessary to look more at competences for different countries and for different markets.

Themes such as understanding between cultures, English language skills, and competence for successfully operating in different contexts were mentioned as examples of important points to be developed. Nevertheless, it was also brought up whether teaching should emphasize *internationalization* or *operating in an international context*, which are two different issues:

> P3: But that, whether internationalization or international context should be emphasized, are two different things. And if we have had courses on software business, and software business in Finland is based on certain principles, but others such as Chinese or Indian are completely different, and then American software business is again completely different.

The least the educational institution should provide students with investigative abilities to find out about differences in international contexts whenever needed.

Similar responses were provided regarding the need for improvement in the IS curriculum and more studies preparing students for globalization. Three out of four respondents (75%) absolutely agreed that the IS curriculum should

include globalization studies. One of the respondents emphasized the difficulty of choosing the most important topics to be taught in a course, as in today's world especially in the IS field there is a constant flow of new important topics to be included in a study module. Another respondent underlined the lack of different country perspectives on the same subject:

> P4: In the IS curricula they do not represent the globalization competence. They basically look only at subject domains, but they do not look at how different subjects are treated in different countries. For example, if it's about mobile services, mobile systems, the subject is different in different countries, even though there are most worldwide standards, but still.

Albeit the subject "mobile systems" might exist in several countries, the subject is yet different in each of them due to country-specific markets, user behavior and requirements. Thereby also different country perspectives should be discussed in relevant IS courses. Whether the internationalization aspect should be integrated to a course or implemented as its own module remained a topic of discussion. However, as the main point, the students should have at least some level of globalization competence prior to graduation. On the strength of the current IS curriculum, there is not enough teaching preparing students to work in the globalizing world.

Next, the respondents were asked for their opinions on competence assessment in general. All of the respondents agreed that competence should be assessed in students as well as possible. Various kinds of learning outcomes exist, and therefore it is important to assess the right kind of learning. Knowledge items are quite straightforward, but the competences to act in specific contexts, utilize one's knowledge in the right situation, or interact appropriately with others become more difficult to assess, as one respondent notes:

> P1: But this is related to teaching and learning in general, like studying it, what is the assessment method if there are several different kinds of learning goals. It is easier if the learning goals concern knowledge, it may be quite straightforward to test, whether the student has gained the knowledge or not. But then there are many others, interaction related and such, which are not always so easy to test.

Another respondent emphasized the importance of informing the students on what they should be learning, which supports the objective of lifelong learning discussed in this work. Becoming competent also requires becoming aware of one's personal learning and competence development. Competence is highly context-dependent, and thus it is extremely important to contextualize the skills in order to find out whether the student actually applies their skills into practice or merely knows about them. Applying skills in practice equals with being competent, and thus hands-on exercises are good for developing competence.

Finally, the best methods for assessing globalization competence in the IS field were discussed. Obviously, book exams were ruled out. The students should be provided with intercultural interaction situations in order to develop their internationalization abilities. In an ideal situation, both student and teach-

er groups should include a wide spectrum of different types of people from a variety of cultural backgrounds. Moreover, significant prerequisites for developing competence are practical approaches such as projects and practical hands-on assignments, as learning happens by doing and is always connected to the situation.

> P2: If we interview our former students and others, then especially in a traditional manner applied through the hard way, this kind of lengthy project course is considered some kind of a culmination during the entire time of studies. Long ago, when we studied the graduation of our students, it was discovered that a project course was the best way to predict a student's graduation: those who completed the project course also graduated. It is a fascinating thing that then all things somehow click into place, so what this whole thing was about.

Therefore it can be concluded that the best way to assess globalization competence in the IS field is to combine a multicultural environment with a hands-on approach exercise. Naturally the best way would be to have actual work abroad training in a multicultural team and let the student apply their skills in practice. However, the best solution is not always possible, and therefore creating a real lifelike international environment and executing a practical business case study or a role-play would offer students the opportunity to apply their skills in a clearly defined situation.

### 7.2.2 Opinions on the framework

The second theme examines academic opinions on the globalization competence assessment framework proposed in this work. At first, the respondents were asked to describe their first thoughts on the framework in general. All of the respondents concurred that the framework seemed like a potentially useful tool for the future, albeit adjustments are required. On the one hand, the framework was described as extremely useful for addressing an important issue, dexterous, usable, and well-constructed with good background reasoning and understandable definitions.

> P4: Well, at first glance the framework looks very, very useful and addresses an extremely useful issue. So that's the first thing. Yes, I see it as extremely important. As a second issue, I see that it's extremely challenging as the framework might change the way a lot of educators teach. So this means changes which often results in trying to get around that and trying to avoid change. People don't really like change. So, the key will be, not only the framework, but how is it embedded in a change management process.

On the other hand, promoting change in the assessment culture through the framework was seen a challenging task, as change is always up to the people to happen and does not happen overnight. Thereby a step by step approach via the change process spiral model is important, as one cannot force change, but

should rather try to raise awareness on the issue to inhibit possible challenges and resistances.

On average, the respondents gave a score of 4 out of 5 regarding the future usefulness of the framework. In its current form the framework was seen to require minor adjustments, but potentially could have a significant impact on teaching and assessment practices in higher education in the IS field. The framework was considered a more useful tool for the teacher to match the expected learning outcomes and assessment methods based on their complexities than an already existing framework:

> P3: A similar framework already exists, but it has not necessary helped course planning, but only after the course has already been planned, the framework has been used to check the learning outcomes, somehow like this. So this framework of yours is more useful specifically in the sense that the teacher can consider if the course is in balance regarding different methods and complexities.

Furthermore, the framework of this work was considered to show clear first steps for including globalization competences and appropriate assessment methods in a course, and thus also appears as a valuable instrument to raise awareness on the issue.

Next, opinions concerning the understandability and clarity of the framework were asked. An average score of 4 out of 5 was given to the understandability of the framework. The framework was thought to be clearly described, well concretized and good for a planning tool. However, previous knowledge on globalization competence assessment was seen as a prerequisite for fully understanding the framework, as one respondent stated:

> P1: Let's say that if I wouldn't know anything about the topic in advance, and then tried to understand based on this [short presentation], then I wouldn't probably understand much. But now that I know your work already and you presented it here, let's say a three for it. Not that there is anything extremely unclear about it when one thinks about it a little, so I think it will open up just moderately fine.

Utilizing the framework requires previous knowledge and understanding of related concepts, hence a set of guidelines should be created for using it in practice. Also for presentation use the framework needs further modifications.

In conclusion, globalization competence assessment and the framework were considered extremely important in today's globalizing world by the majority of the respondents. Information systems, data processing, and working in the IS field is increasingly internationally networked and therefore all graduates should have at least some level of globalization competence. One of the respondents noted that sometimes globalization competence is taken too much for granted in the modern world and not enough attention is paid to its education. Integrating internationalization aspects into study modules and getting the whole organization aboard the change is a long process, yet it seemed to be more favored than implementing new courses with internationalization themes. The priority of the internationalization aspect and how to decide whether it

should be included over other topics in courses was contemplated by one respondent, as there are a myriad of other important topics that could be taught for students as well. However, this work begins from the assumption that the internationalization aspect is desired to be included in teaching, and thus the issue is left for future research. Creating as authentic assessment situations as possible was stressed as the most important point to be remembered.

### 7.2.3 Usability of the framework

In the third subsection only the instructor of the case study course was interviewed on the usability of the framework in practice. The practical usability of the globalization competence assessment framework was rated 4 out of 5. First, the course instructor was asked about the clarity of the instructions on using the methods in the framework. The methods of the framework were clear and conceptually the framework was considered mature according to the instructor. However, it was presumed that it could be more difficult to understand the use of the framework for someone who is not familiar with the core concepts, hence the need for clarifying the framework and creating guidelines in future research.

The sample assessment plan and the written proposals were the next topics of discussion. The sample assessment plan was considered necessary and useful, but might require adjustments for adaptation to different contexts. Attention must be paid to the presentation of the samples, as there is always a risk of people reproducing the sample instead of making their own:

> P4: It's definitely very useful and it's much needed. Of course always the presentation of samples means that people tend to reproduce the sample and that's of course not intended and might be even a problem, even though the sample is very useful for another context. […] So it might be the case that depending on the application field, that there need to be different samples and then it's up to the framework builder.

Furthermore, the written proposals were thought to be useful in the instructor's opinion. Some of the proposals were outreaching the given time frame of the course and thereby could not be realized. Nevertheless, all the proposed changes to the course were regarded as pertinent and implementable in time. Investigating the time required for each phase and how long it takes to implement the desired changes to the course are topics for further research.

Finally, the reliability (reproducibility and comparability) of the results produced by the framework were discussed. In the first phase, the assessment method recommended by the framework should be seen appropriate by the teacher and students in order to validate the framework. Moreover, to truly determine if the competence was assessed, the graduated students would need to be asked after a few years of working in an enterprise whether they had gained the competence that was promised on a course during their studies. This is quite a long cause and effect chain and requires time to be validated. Nevertheless, according to the course instructor, the framework seems reliable for the first part of the cause and effect chain and is a good way to raise awareness on

globalization, globalization competence, and its assessment. Naturally, in order to deem the framework reliable, it requires validation in a variety of scenarios, and should reproduce similar results in similar contexts. Nonetheless, reproducibility is complicated to validate, as contexts and people inside organizations are never exactly the same:

> P4: For example reproducibility is complex to reproduce because you will not have the very same context anywhere, even though you work with similar personalities in the same university or in the same subject area, still it's hard to say that certain results will reproduce one-to-one because the framework is always adapted to the context and the context always differs. So that's the problem of real world issues.

As a summary, the globalization competence assessment framework was considered a positive and useful tool for an extremely important issue in the opinion of the course instructor. Further adjustments and guidelines should be included in the framework, but their implementation is left for future research.

# 8 DISCUSSION

This section discusses the results of the case study and analyses their relation to the theoretical assumptions of this work. The main objective of the case study was to validate the proposed globalization competence assessment framework, which was constructed in this work. Both student and academic point of views were included in the case study. Student surveys aimed at discovering if the chosen assessment method contributed to the students' competence development and to what degree. The goal of the academic interviews was to find out opinions on the practical usefulness and future educational prospects.

Intercultural competence emerges as the core attribute for working in the increasingly globalizing world (Krajewski, 2011; Spitzberg & Changnon, 2009) and thus the demand for interculturally competent graduates is on the rise (Deardorff, 2005; Paige & Goode, 2009; Spitzberg & Changnon, 2009). The objective of the proposed globalization competence assessment framework was to answer this need and raise awareness on the issue by recommending suitable methods for assessing globalization competence in the IS field. Not much studies has been conducted on globalization competence assessment in the IS field as of yet (Deans & Loch, 1998; Pawlowski & Holtkamp, 2012), and thus theories were adapted from other domains such as international education, business, psychology, and health care (see for example Deardorff, 2006; Johnson et al., 2006; Kaslow et al., 2007; Leigh et al., 2007). Focus of the framework was put to analyzing *Collaboration and knowledge management* as well as *Intercultural competences*. According to the internationalization competence framework by Pawlowski & Holtkamp (2012), *Collaboration and knowledge management competences* include knowledge sharing skills and work attitudes in an international team, whereas *Intercultural competences* include cultural awareness and understanding of cultural differences. Knowledge sharing, cultural awareness and understanding of cultural differences were seen included in the learning outcomes of *Global Knowledge Management* course, and thus it was selected as the case study course. According to the course description, the course should develop the abilities to:

- share knowledge and information with the team
- solve problems collaboratively
- understand other people's perspectives, needs and values
- language skills
- understand the influences and implications culture has in work life
- evaluate different factors from multiple cultural perspectives

First, the student point of view is discussed. Merely a slight one-to-one resemblance was observed in the students' competence development and the course learning outcomes. The only abilities that should have developed on the course and were considered developed in the students' opinions were the abilities to:

- understand the influences and implications culture has in work life
- evaluate perspectives, practices and products from multiple cultural perspectives

The two developed abilities were addressed in the core learning outcomes of the course, which are presented in TABLE 13 of the course profile in chapter six. First, understanding how culture affects, for instance, process design and development is vital in IS work in the field. The increasingly globalizing world is specifically affecting the fast pacing IS field, which the academic interviews of the case study also confirmed. Secondly, learning to evaluate different cultural perspectives though diverse culture models is a prerequisite for working in a multicultural environment. Open-mindedness, the skill to evaluate different perspectives, and knowing that one's worldview is not the only one have been acknowledged as vital in intercultural communication across fields (see for example Deardorff, 2006; Johnson et al., 2006; Olson & Kroeger, 2001; Pawlowski & Holtkamp, 2012). A smaller proportion also mentioned to have developed the abilities *to share information and knowledge with the team* and *understand other people's perspectives, needs and values*. Nevertheless, these abilities showed a negative change when comparing the development score before and after the course.

The third ability showing a positive development after the course was the ability *to communicate sensitively taking into account other personalities and cultures*, which belongs to the *Communication competence* category. As pointed out earlier in this work, sensitive communication skills and learning to take into account different types of personalities and cultural backgrounds can also develop through an interactional group assignment. Knowledge on other cultures and thus knowing how to behave was also emphasized as being essential in intercultural communication situations by various scholars (see for example Deardorff, 2006; Johnson et al., 2006; Olson & Kroeger, 2001). Students' communication competence might have developed as a by-product via the case study, albeit it was not the focus of the course.

However, some of the abilities which were hypothesized to develop through the case study method did not develop, for example the ability *to solve problems collaboratively*. Hence, it can be deduced that a self-evaluation method

should have been included (multimethod approach), the assessment scenario was not authentic enough (for assessing combined competences), the case study was not instructed clearly (students did not become aware of learning), or the case study method used in the course was not suitable. Therefore, additional investigations on this must be conducted in future research.

The results of the student surveys indicate that there was some ambiguity in grasping the course learning objectives. The students did not seem to be completely aware of what they should be learning on the course. A number of scholars have been promoting lifelong self-regulated learning and the involvement of students in assessment in the higher education level, for instance through self-evaluation and peer assessment (see for example Boud & Falchikov, 2007; European Communities, 2008; Falchikov & Goldfinch, 2000; Nicol & Macfarlane-Dick, 2006; Paquette, 2007). Self-evaluation prior the course may have helped the students to become aware of what they should be learning. The academic interviews of the case study also emphasized the significance of explaining the learning goals to the students to make them aware of what they should be learning on the course. Thereby as proposed in the course amendments, some further clarification on the course learning outcomes and the objectives of the course is still in order.

Regarding the course assessment methods, the students rated the case study method as mediocre suitability for the GKM course. According to the globalization competence assessment framework presented earlier in this work (TABLE 10), the case study method should be suitable for assessing specifically collaboration and knowledge management competence. However, the score 4 was given the most times for fitness of the case study method for the course, and thereby it may be considered an appropriate assessment method for the course in question. The students' suggestions for improving the course also matched the proposed changes to the course. Including a learning diary or peer feedback in the course assessment was proposed in the course amendments in order to assess both group as well as individual performance. Furthermore, some of the students mentioned having difficulties in completing the group work because of other group members. Developing intercultural competence specifically requires those complex intercultural situations which allow room for making mistakes and thus learning from them, as was mentioned in the Japanese expert interviews as well as in literature (Deardorff, 2006).

Next, the globalization competence assessment framework itself is discussed from the academic point of view. Globalization competence assessment was generally considered an important aspect of higher education in the IS field, as graduates will most likely be encountering intercultural situations later in their work even to some extent. Past research has also identified the lack of studies preparing students for international contexts in the IS domain (Deans & Loch, 1998; Pawlowski & Holtkamp, 2012). The results of the case study confirmed that globalization competence assessment is context-dependent, which was discussed in chapter two in this work. Hence, the framework has to be adapted to the requirements of every domain, culture, and organization. Tim-

ing of the assessment was not discussed in the case study, yet it must not be forgotten. Competence is recommended to be assessed multiple times during studies to verify its development, and also give the student an opportunity to follow his or her own development (Deardorff, 2006; Põldoja et al., 2011). This could be done for instance via competence surveys in the beginning and at the end of a course, as was done in the case study.

Globalization competences and the internationalization aspect were seen best to be integrated to courses instead of creating a whole new study module for "internationalization". According to Deardorff, (2004, 2005, and 2006) intercultural competence is best assessed when it is integrated into the curriculum and study program as a whole. An approach that merges intercultural context with suitable assessment methods was seen as the best way to assess globalization competence in the opinion of the respondents. Suitable assessment method herein means that the right method should always be chosen according to the assessment goal, whether knowledge, decision making, performance, personal attributes, or practical skills. As an instance, theoretical knowledge could be assessed by a written exam, whereas practical skills should be assessed by a student project (Leigh et al., 2007; Marcolin et al., 2000). Choosing an appropriate assessment method for different kinds of targets was deemed vital in the academic interviews as well as in past research (Deardorff, 2004; Fantini, 2009).

A discussion related to the assessment of combined competences, such as knowledge management and intercultural competences, emerged when examining the case study results on the best assessment method for assessing globalization competence. In the IS domain majority of the topics taught are best assessed by a practical hands-on method, and thus implementing a project or a case study as a multicultural group assignment is seen as the foremost way to assess globalization competence. Through a hands-on method the student is given an opportunity to apply his or her skills and knowledge in practice in a given context, which is exactly when competence develops (see for example Baartman et al., 2006; Deardorff, 2006; Fantini, 2009; Kaslow et al., 2007; Krajewski, 2011; Leigh et al., 2007; Wolf, 2001). Furthermore, the academic interviews confirmed the hypothesis of this work that it is essential to create as authentic situations as possible for students to interact with multiple cultural backgrounds for globalization competence to develop. Doing an internship abroad in a foreign company potentially develops globalization competence the most. However, such solutions are not always possible for everyone, as noted by one of the respondents.

General impressions concerning the revised globalization competence assessment framework were positive. Potentially the framework was seen an extremely important and useful tool for educators in the IS field, who wish to integrate an internationalization aspect into their teaching. Even though a thorough organizational change in assessment practices will take a long time, the least the framework can do at this point is to raise awareness on the need for more globalization education in the IS field. Furthermore, the spiral model was seen as good way to implement an internationalization aspect into a study

module. A step by step approach was stressed, as organizational change does not happen overnight. Raising awareness on the issue beforehand is essential to avoid major setbacks. Resistances to change can be a positive thing, but not to the extent when it causes negative effects on members of the organization.

Finally, collaboration in the IS field between higher education institutions in Finland and Japan seems promising. A short cultural analysis conducted in chapter two revealed that Finnish and Japanese people are quite similar in their thinking according to Trompenaars' (1998) culture dimensions. Moreover, the assessment methods used in IS courses for assessing globalization competence were seen to correspond each other in the light of past research (Stén et al., 2012) and the empirical findings of this work. In order to create truly multicultural assessment scenarios for students, a course could be organized in collaboration with another institution to provide students the opportunity to interact with other nationalities in a virtual learning environment, or even on visits to the partner university. This was proposed in the case study and albeit not implemented yet, it was deemed as a future goal by the case study course instructor.

# 9 SUMMARY AND OUTLOOK

The prime goal of this interdisciplinary study was to construct a revised globalization competence assessment framework for the IS domain to aid decision making of teachers in the field. *Globalization competence* in this work was defined as a set of skills, abilities and attitudes of functional areas such as ICT, project management and leadership, collaboration and knowledge management, communication and culture, which enable the individual to solve problems and perform effectively in an international context in the IS domain. The framework matches globalization competences with suitable assessment methods based on competence complexity levels. Two internationalization competence areas were selected as the focus areas for this work; competences from the *Collaboration and knowledge management* and *Culture* categories.

A design science research method was used. The study began by identifying the real world research problem; the IS field lacks a culture of competence assessment and an increasing amount of teaching preparing students for the globalizing world is in demand. Next, the objectives to achieve the solution were determined. Constructing a revised version of the globalization competence assessment framework and studying the current state of globalization competence assessment in the focus countries became the foremost means of responding to the needs and raising awareness on the aforementioned issues. Thus, the framework was designed according to literature analyses on past research. In addition, a small scale empirical study on the current globalization competence assessment methods in Japan was conducted. The framework was demonstrated on a higher education course of IS as a case study and validated through student surveys and academic interviews. This work will be communicated to appropriate audiences through publishing as open access in the electronic database of the university and can be utilized for future research on globalization competence and its assessment in the IS field.

The answers to the research questions are presented in the following. The main research question was: *How to support higher education teachers in assessing globalization competence of students in the IS field in Finland and Japan?* The answer is through the globalization competence assessment framework. However, in

order to substantiate the main research question further, the set secondary research questions are discussed in more detail.

*How do context and timing affect the assessment?*

Three contextual factors affecting globalization competence assessment were discussed in chapter two of this work – domain, national culture, and organization. Specific requirements of different contextual factors should always be considered when working in a multicultural context, as every domain, country and organization is unique. Developing competence is a prolonged and context-dependent process, which was also confirmed by the academic interviews of the case study. Timing of the assessment is another important issue to be considered according to literature, albeit it was not discussed in the case study. Ideally, competence should be assessed several times during studies in order to get a clear picture of the student's competence development and acquisition. However, in the current higher education system life-long assessment is not implemented, and thus would require a whole organizational change to realize.

*How combined competences (e.g. collaboration and intercultural) can be assessed?*

Globalization competence often comprises both domain-specific abilities, such as collaboration and knowledge management, as well as intercultural abilities. Assessing combined competences is not executed merely by combining two different assessment methods, but a suitable assessment method has to be found for the new target competence to be assessed. Assessing globalization competence thus requires a multimethod and a multiperspective assessment approach integrated into the curriculum. This work proposes the creation of authentic problem solving scenarios in order to assess combined competences, for example, knowledge management abilities in a globally distributed project. The case study of this work confirmed the assessment of combined competences and thus developing globalization competence, at least to some degree, when students executed a case study in multicultural students groups. Intercultural competence does not develop merely by reading books, and thus creating as real lifelike multicultural context as possible for the students to solve knowledge management problems within is the key for enabling both domain-specific as well as intercultural competence to develop.

*What is the current state of competence assessment in higher education courses in Finland and Japan?*

The current state globalization competence assessment and the methods used were also investigated in this work in order to gain a first insight on the collaboration possibilities between Finland and Japan and the rest of this study. First, a review on literature refuted the prejudices on cultural disparities and showed that the countries do not ultimately differ much. A literature analysis on past research and a small scale empirical study discovered that the assessment

methods of globalization competences in the IS field in Finland generally correspond to the ones in Japan. Both countries preferred a practical multimethod case study approach mixed with a presentation for assessing globalization competence. Similar use of written assignments and exams was also detected. Respondents in both countries agreed that interactional group assignments were the best way to assess globalization competence, but such practices were not always implemented in courses. However, a shift in assessment practices towards more interactional methods had been observed. Findings of this study confirmed the feasibility of collaboration between Finland and Japan in the IS field for future research.

*How to implement the change process for improving the course organization?*

After having constructed the revised globalization competence assessment framework, a change process for utilizing it in practice was introduced. A four-step spiral model was designed in order to aid the course instructors in adding an internationalization aspect into their teaching. The spiral model was further confirmed in the case study, as a step by step approach is the best way to initiate organizational change.

**Future research aspects**

Plenty of future research prospects exist. A myriad of research opportunities were known since the beginning of this study due to the novelty of the research field. However, also new potential research topics emerged after having conducted the case study. Some of the future research aspects are presented herein.

The globalization competence assessment framework is developed iteratively, and thus its development will continue in future research. One of the prime goals is to determine the most suitable assessment method for each globalization competence category. Collaboration between Finnish and Japanese institutions and thus accommodating the globalization competence assessment framework to suit the needs of both cultures must be investigated further, as this work only gave first insights on the current status of globalization competence assessment in the countries. The framework was demonstrated merely in a Finnish context in this work, and thus a trial must be executed also in a Japanese environment. The study on assessment preferences of Japanese IS courses conducted in this work gave a positive starting point for collaboration, yet a larger scale quantitative study should be conducted in future research.

In the bigger picture, globalization competence assessment faces additional challenges raised by the case study. Educational institutions are challenged to assess students' globalization competence, which naturally takes an extended period of time to develop. The whole educational system thereby has to change. Another issue to be considered is the need for integrating the internationalization aspect into the curriculum – How to decide whether it should be included over other topics in study modules or not? Moreover, further adjustments must

be done to the framework in order to clarify its usability, and investigate the time required for the whole change process and single steps in the spiral model.

As the final conclusion to this study, the results of the case study support the theoretical foundation presented in this work. Albeit the research topic is relatively new, similar responses were received from both students and academics in the IS field on the importance and assessment of globalization/intercultural competence compared to scholars from other fields. Globalization competence is a prerequisite in today's multicultural world and competence assessment itself truly reveals whether the student has achieved the desired learning outcomes or not. Hence, globalization competence assessment should not be ignored in the IS field. Based on the results of the case study, the globalization competence assessment framework constructed in this research was considered a positive and a useful tool for the future. It can forward the development of culture of competence assessment in the IS field, act as a decision making tool for instructors of IS courses, and raise awareness on the need for studies preparing students for international work in the increasingly globalizing world. Furthermore, the insights gained in this study implicate that collaboration between higher education institutions in Finland and Japan in the IS field is feasible. My future research will continue adjusting the framework and further studies will be conducted on globalization competence assessment methods in Finland and Japan.

## BIBLIOGRAPHY


Anand, R. & Lahiri, I. (2009). Developing skills for interculturally competent care. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 387-402). Thousand Oaks, CA: SAGE Publications.

Arasaratnam, L. A. (2006). Further testing on a new model of intercultural communication competence. *Communication Research Reports, 23*(2), 93-99.

Baartman, L. K. J., Bastiaens, T. J., Kirschner, P. A. & Vleuten, C. P. M. van der (2006). The wheel of competency assessment: presenting quality criteria for competency assessment programs. *Studies in Educational Evaluation, 32*(2), 153-170.

Begum, M. & Newman, R. (2009). Evaluation of students' experiences of developing transferable skills and business skills using a business simulation game. In *Proceedings of the 39th IEEE International Conference on Frontiers in Education Conference* (p. 92-97). Piscataway, NJ: IEEE Press.

Bennett, J. M. (2009). Cultivating Intercultural Competence. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 121-140). Thousand Oaks, CA: SAGE Publications.

Bhagwati, J. N. (2007). *In Defense of Globalization*. Oxford: Oxford University Press.

Boud, D. & Falchikov, N. (2007). Introduction: assessment for the longer term. In D. Boud & N. Falchikov (Eds), *Rethinking Assessment in Higher Education: Learning for the Longer Term* (p. 3). New York, NY: Routledge/Taylor & Francis Group.

Campion, M. A., Fink, A. A., Ruggeberg, B. J., Carr, L., Phillips, G. M. & Odman, R. B. (2011). Doing competencies well: best practices in competency modeling. *Personnel Psychology, 64*, 225-262.

Chilton, M. A. & Hardgrave, B. C. (2004). Assessing information technology personnel: toward a behavioral rating scale. *Database for Advances in IS, 35*(3), 88-104.

Continental AG (2006). *In Search of Global Engineering Excellence.* Accessed 1st of August 2012 at http://www.conti-online.com/generator/www/com/en/continental/gee/themes/download/study_order_medium_en.pdf

Croucher, S. (2004). *Globalization and Belonging: The Politics of Identity in a Changing World*. Lanham, MD: Rowman and Littlefield.

Deans, P. D. & Loch, K. D. (1998). A longitudinal assessment of trends toward internationalization of the IS curriculum. *Journal of Education for MIS, 5*(1), 9-18.

Deardorff, D. K. (2004). *The identification and assessment of intercultural competence as a student outcome of international education at institutions of higher education in the United States.* Doctoral dissertation in Adult and Community College

Education. North Carolina State University, Raleigh. Accessed 6th of August 2012 at http://www.lib.ncsu.edu/resolver/1840.16/5733

Deardorff, D. K. (2005). A matter of logic? *International Educator, 14*(3), 26-31.

Deardorff, D. K. (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education, 10*(3), 241-266.

Deardorff, D. K. (2009). Implementing intercultural competence assessment. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 477-491). Thousand Oaks, CA: SAGE Publications.

European Communities (2008). *The European Qualifications Framework for Lifelong Learning (EQF).* Luxembourg: Office for Official Publications of the European Communities.

Falchikov, N. & Goldfinch, J. (2000). Student peer assessment in higher education: a meta-analysis comparing peer and teacher marks. *Review of Educational Research, 70*(3), 287-322.

Fantini, A. E. (2009). Assessing intercultural competence. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 456-476). Thousand Oaks, CA: SAGE Publications.

Fält, O. K., Nieminen, K., Tuovinen, A. & Vesterinen, I. P. (1994). *Japanin kulttuuri [Japanese culture].* Helsinki: Otava.

Grandin, J. M. & Hedderich, N. (2009). Global competence for engineers. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 362-373). Thousand Oaks, CA: SAGE Publications.

Grant, G., Elbow, P., Ewens, T., Gamson, Z., Kohli, W., Neumann, W., Olesen, V. & Riesman, D. (1979). *On Competence: A Critical Analysis of Competence-based Reforms in Higher Education.* San Francisco, CA: Jossey-Bass Publishers.

Grant, S., & Young, R. (2010). Concepts and standardization in areas relating to competence. *International Journal of IT Standards & Standardization Research, 8*(2), 29-44.

Held, D., McGrew, A., Goldblatt, D. & Perraton, J. (2000). Rethinking globalization. In D. Held & A. McGrew (Eds), *The Global Transformations Reader: An Introduction to the Globalization Debate* (p. 67-74). UK: Policy Press in association with Blackwell Publishing Ltd.

Henderson, L. (2007). Theorizing a multiple cultures instructional design model for e-learning and e-teaching. In A. Edmundson (Ed), *Globalized E-Learning Cultural Challenges* (p. 130-153). Hershey, PA: Information Science Publishing.

Hevner, A. R., March, S. T., Park, J. & Ram, S. (2004). Design science in IS research. *MIS Quarterly, 28*(1), 75-105.

Hofstede, G. H. (1991). *Cultures and Organizations: Software of the Mind.* New York, NY: McGraw-Hill.

Hunter, B., White, G. P. & Godbey, G. C. (2006). What does it mean to be globally competent? *Journal of Studies in International Education, 10*(3), 267-285.

Johnson, J. P., Lenartowicz, T. & Apud, S. (2006). Cross-cultural competence in international business: toward a definition and a model. *Journal of International Business Studies, 37*(4), 525-543.

Jokinen, T. (2005). Global leadership competencies: a review and discussion. *Journal of European Industrial Training, 29*(3), 199-216.

Karppinen, M. (2006). *Cultural patterns of knowledge creation: Finns and Japanese as engineers and poets.* Doctoral dissertation in International Business. Helsinki School of Economics.

Kaslow, N. J., Rubin, N. J., Bebeau, M. J., Leigh, I. W., Lichtenberg, J. W., Nelson, P. D., Portnoy, S. M. & Smith, I. L. (2007). Guiding principles and recommendations for the assessment of competence. *Professional Psychology: Research and Practice, 38*(5), 441–451.

Kirkpatrick, D. (1996). Great ideas revisited: techniques for evaluating training programs – revisiting Kirkpatrick's four-level model. *Training and Development, 50*(1), 54-59.

Knight, J. (2004). Internationalization remodeled: definition, approaches, and rationales. *Journal of Studies in International Education, 8*(1), 5-31.

Krajewski, S. (2011). Developing intercultural competence in multilingual and multicultural student groups. *Journal of Research in International Education, 10*(2), 137-153.

Leiba-O'Sullivan, S. (1999). The distinction between stable and dynamic cross-cultural competencies: implications for expatriate trainability. *Journal of International Business Studies, 30*(4), 709-725.

Leigh, I. W., Smith, I. L., Bebeau, M. J., Lichtenberg, J. W., Nelson, P. D., Portnoy, S., Rubin, N. J. & Kaslow, N. J. (2007). Competency assessment models. *Professional Psychology: Research and Practice, 38*(5), 463-473.

Lohmann, J. R. & Rollins, H. A. (2004). Work in progress - integrating international competence into baccalaureate degrees. In *Frontiers in Education, 2004 (FIE 2004), 34th Annual*, T3D/9-T3D/10.

Magnani, J. W., Minor, M. A. & Aldrich, J. M. (2002). Care at the end of life: a novel curriculum module implemented by medical students. *Academic Medicine, 77*(4), 292-298.

Marcolin, B. L., Compeau, D. R., Munro, M. C. & Huff, S. L. (2000). Assessing user competence: conceptualization and measurement. *IS Research, 11*(1), 37-60.

Moran, R. T., Youngdahl, W. E. & Moran, S. V. (2009). Leading global projects: bridging the cultural and functional divide. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 287-303). Thousand Oaks, CA: SAGE Publications.

Nicol, D. J. & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199-218.

North, K. & Gueldenberg, S. (2011). *Effective Knowledge Work: Answers to the Management Challenges of the 21st Century.* Bingley: Emerald Group Publishing.

Office of Minority Health (2001). National Standards for Culturally and Linguistically Appropriate Services in Health Care – Final Report. Accessed 1st of August 2012 at http://minorityhealth.hhs.gov/assets/pdf/checked/finalreport.pdf

Ojala, A. (2008). Entry in a psychically distant market: Finnish small and medium-sized software firms in Japan. *European Management Journal 26*(2), 135-144.

Olson, C. L. & Kroeger, K. R. (2001). Global competency and intercultural sensitivity. *Journal of Studies in International Education, 5*(2), 116-137.

Oxford Dictionaries (2010a). "*ability*". Oxford University Press. Accessed 30th of July 2012 at http://oxforddictionaries.com/definition/english/ability

Oxford Dictionaries (2010b). "*capability*". Oxford University Press. Accessed 11th of January 2013 at http://oxforddictionaries.com/definition/english/capability

Oxford Dictionaries (2010c). "*vignette*". Oxford University Press. Accessed 23rd of October 2012 at http://oxforddictionaries.com/definition/english/vignette

Paige, R. M. & Goode, M. L. (2009). Cultural mentoring: international education professionals and the development of intercultural competence. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 333-349). Thousand Oaks, CA: SAGE Publications.

Paquette, G. (2007). An ontology and a software framework for competency modeling and management. *Educational Technology and Society, 10*(3), 1-21.

Pavlin, S. (2009). HEGESCO Statistical Outlook. A HEGESCO report accessed 14th of September 2012 at http://www.decowe.org/static/uploaded/htmlarea/finalreportshegesco/Hegesco_Statistical_Outlook.pdf

Pawlowski, J. M. (2012). Website of the Global Information Systems research area at the University of Jyväskylä. Accessed 19th of October 2012 at http://users.jyu.fi/~japawlow/teaching.html

Pawlowski, J. M. & Holtkamp, P. (2012). Towards an internationalization of the IS curriculum. In *Proceedings of MKWI 2012 (Multi Conference Business IS), Braunschweig, March 2012.*

Peffers, K., Tuunanen, T., Rothenberger, M. A. & Chatterjee, S. (2007). A design science research methodology for IS research. *Journal of Management IS, 24*(3), 45-77.

Põldoja, H., Väljataga, T., Tammets, K. & Laanpere, M. (2011). Web-based self- and peer-assessment of teachers' educational technology competencies. In L. Howard, E. Popescu, Y. Cao, R. Lau & W. Nejdl (Eds), *Advances in Web-Based Learning - ICWL 2011* (p. 122-131). Heidelberg: Springer Berlin.

Robertson, R. (1992). *Globalization*: *Social Theory and Global Culture*. London: Sage Publications Ltd.

Robson, C. (2002). *Real World Research* (2nd edition). Blackwell Publishing.

Runeson, P. & Höst, M. (2009). Guidelines for conducting and reporting case study research in software engineering. *Empirical Software Engineering, 14*(2), 131-164.

Spencer Jr., L. M. (1997). Competency assessment methods. In L. J. Bassi & D. Russ-Eft (Eds), *What Works: Assessment, Development, and Measurement* (p. 1-36). Alexandria, VA: American Society for Training & Development.

Spitzberg, B. H. (2011). Axioms for a theory of intercultural communication competence. In L. A. Samovar, R. E. Porter & E. R. McDaniel (Eds), *Intercultural Communication: A Reader, 13th edition* (p. 424-435). Boston, MA: Wadsworth Publishing/Cengage Learning.

Spitzberg, B. H. & Changnon, G. (2009). Conceptualizing intercultural competence. In D. K. Deardorff (Ed), *The SAGE Handbook of Intercultural Competence* (p. 2-52). Thousand Oaks, CA: SAGE Publications.

Spitzberg, B. H. & Cupach, W. R. (1984). *Interpersonal Communication Competence.* Thousand Oaks, CA: SAGE Publications.

Stén, T., Pawlowski, J. M. & Pirkkalainen, H. (2012). The globalization competence assessment framework: assessing globalization competences in the Information Systems domain. *International Journal of Knowledge Society Research, 3*(4), 32-45.

Suskie, L. (2009). *Assessing Student Learning: A Common Sense Guide* (2nd edition). San Francisco, CA: Jossey-Bass Publishers.

Thomas, D. C. (2008). *Cross-Cultural Management: Essential Concepts* (2nd edition). Thousand Oaks, CA: SAGE Publications.

Ting-Toomey, S. (1999). *Communicating Across Cultures*. New York, NY: Guildford Press.

Trompenaars, F. (1998). *Riding the Waves of Culture: Understanding Diversity in Global Business* (2nd edition). New York, NY: McGraw-Hill.

Trotter, A. & Ellison, L. (2001). Understanding competence and competency. In B. Davies & L. Ellison (Eds), *School Leadership for the 21st Century: A Competency and Knowledge Approach* (p. 36-53). London: Routledge.

Tung, R. L. (1987). Expatriate assignments: enhancing success and minimizing failure. *Academy of Management Executive, 1*(2), 117-125.

Velden, R. van der & Allen, J. (2009). *Competencies and Early Labour Market Careers of Higher Education Graduates.* HEGESCO report. University of Ljubljana, Faculty of Social Sciences, Slovenia.

Vleuten, C. P. M. van der & Schuwirth, L. W. T. (2005). Assessing professional competence: from methods to programmes. *Medical Education, 39*(3), 309-317.

Welch, L. S. & Luostarinen, R. (1988). Internationalization: evolution of a concept. In P. J. Buckley & P. N. Ghauri (Eds), *The Internationalization of the Firm* (p. 83-98). Hampshire: International Thomson Business Press/Cengage Learning.

Wolf, A. (2001). *Competence-Based Assessment*. Accessed 1st of January 2012 at http://www.heacademy.ac.uk/assets/documents/resources/heca/heca_cl25.pdf

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd edition). Thousand Oaks, CA: Sage Publications.

# APPENDIX 1: INTERVIEW ON ASSESSMENT METHODS

The main goal of the interview is to find out how globalization competences are currently assessed in courses of higher education of IS in Japan.

**Relevance of globalization competences**
A listing of globalization competences can be found in appendix 1 (included with the interview questions).

1. What is/are the name(s) of your course(s)? You can mention many.
2. What are the main learning goals of your course (briefly)?
3. Are globalization competences relevant to your course? How? Please refer to appendix 1 and mark down which competences are affiliated with your course.
4. How globalization competences (or some of them) are addressed in your course? Please refer to appendix 1 if needed.

**Current assessment methods**
A listing of example assessment methods can be found in appendix 2 (included with the interview questions).

5. In general, what are the most popular assessment methods in Japan? What are the main differences compared to Finnish courses (if you can think of any)? Please refer to appendix 2.
6. What is/are the current assessment method(s) used for assessing globalization competences in your course? You can list many. Please refer to appendix 2.
    - If you course does not include globalization aspects, please think of an example scenario, "what if…"
7. From your experience, are students able to apply their skills and competences after they graduate? How do they perform in international teams?

**Future possibilities**

8. Have you envisioned improving your course or its assessment methods in the future? How?
9. What do you imagine would be the best way to assess students' competence required for operating in an international context in the IS field?

# APPENDIX 2: SURVEY ON STUDENTS' COMPETENCE (BEGINNING)

The objective of this survey is to map the current competence levels of students attending the course *Global Knowledge Management* in the fall semester 2012. Particular focus areas of competence mapping include collaboration, knowledge management and intercultural competence.

**Definition of competence:**

> Competence is a collection of skills, abilities, knowledge and attitudes to solve a problem in a given context. Being competent therefore means being able to solve a problem in a certain context by utilizing one's skills, knowledge and abilities.

All the answers will remain confidential and anonymous, however, an identifier (*name, nickname or pass code*) is asked in order to compare survey results in the beginning and at the end of the course. Please use the same identifier in the beginning and at the end of the course and select a nickname or a pass code which you will remember easily in case you don't want to use your own name.

**Demographic information**

1. Name, nickname or pass code: _____
2. Age: _____
3. Sex: _____
4. Nationality: _____

**Background information**

5. Major subject/study program:

_____

6. Completed courses relevant to the course topic *(e.g. culture, knowledge management, language studies, etc.)*:

_____

7. Other intercultural experience/merits *(e.g. student exchange, work abroad, etc.)* which would help in completing this course:

_____

**Questions related to competence**

8. How would you describe your intercultural competence? *(Intercultural competence refers to the skills, knowledge, abilities and attitudes which you are able to use to behave and communicate appropriately and effectively in intercultural situations.)*

_____

9. How would you rate your competence in the following areas (circle)? 1 = poor; 5 = excellent

| | | | | | |
|---|---|---|---|---|---|
| **Collaboration and knowledge management** | | | | | |
| Ability to share information and knowledge with the team | 1 | 2 | 3 | 4 | 5 |
| Ability to solve a problem collaboratively | 1 | 2 | 3 | 4 | 5 |
| Ability to understand other people's perspectives, needs and values | 1 | 2 | 3 | 4 | 5 |
| **Communication** | | | | | |
| Ability to communicate sensitively taking into account other personalities and cultures | 1 | 2 | 3 | 4 | 5 |
| Ability to listen to others and consider their thoughts | 1 | 2 | 3 | 4 | 5 |
| Ability to communicate clearly and articulately | 1 | 2 | 3 | 4 | 5 |
| Ability to focus on key points during communication | 1 | 2 | 3 | 4 | 5 |
| **Culture** | | | | | |
| Language skills (English) | 1 | 2 | 3 | 4 | 5 |
| Understanding the influences and implications culture has in work life | 1 | 2 | 3 | 4 | 5 |
| Ability to evaluate perspectives, practices and products from multiple cultural perspectives | 1 | 2 | 3 | 4 | 5 |

Other relevant competences regarding the course topic, what? (No need to rate.)

_____

10. According to the introductory lecture of this course, what competences you believe you will develop during the course? You can tick as many as you want.

**Collaboration and knowledge management**

☐ Ability to share information and knowledge with the team
☐ Ability to solve a problem collaboratively
☐ Ability to understand other people's perspectives, needs and values

**Communication**

☐ Ability to communicate sensitively taking into account other personalities and cultures

☐ Ability to listen to others and consider their thoughts

☐ Ability to communicate clearly and articulately

☐ Ability to focus on key points during communication

**Culture**

☐ Language skills (English)

☐ Understanding the influences and implications culture has in work life

☐ Ability to evaluate perspectives, practices and products from multiple cultural perspectives

Other competences, what?

_____

# APPENDIX 3: SURVEY ON STUDENTS' COMPETENCE (END)

The objective of this survey is to map the current competence levels of students attending the course *Global Knowledge Management* in the fall semester 2012. Particular focus areas of competence mapping include collaboration, knowledge management and intercultural competence.

**Definition of competence:**

> Competence is a collection of skills, abilities, knowledge and attitudes to solve a problem in a given context. Being competent therefore means being able to solve a problem in a certain context by utilizing one's skills, knowledge and abilities.

All the answers will remain confidential and anonymous, however, an identifier (*name, nickname or pass code*) is asked to compare survey results in the beginning and at the end of the course. Please use the same identifier in the beginning and at the end of the course and select a nickname or a pass code which you will remember easily in case you don't want to use your own name.

**Demographic information**

1. Name, nickname or pass code: _____
2. Age: _____
3. Sex: _____
4. Nationality: _____

**Questions related to competence**

5. What competences did you develop during the course? You can tick as many as you want.

**Collaboration and knowledge management**

☐ Ability to share information and knowledge with the team
☐ Ability to solve a problem collaboratively
☐ Ability to understand other people's perspectives, needs and values

**Communication**

☐ Ability to communicate sensitively taking into account other personalities and cultures
☐ Ability to listen to others and consider their thoughts
☐ Ability to communicate clearly and articulately
☐ Ability to focus on key points during communication

**Culture**
☐ Language skills (English)
☐ Understanding the influences and implications culture has in work life
☐ Ability to evaluate perspectives, practices and products from multiple cultural perspectives

Other competences, what?

_____

6. How would you rate your competence now in the following areas? 1 = poor; 5 = excellent

| | | | | | |
|---|---|---|---|---|---|
| **Collaboration and knowledge management** | | | | | |
| Ability to share information and knowledge with the team | 1 | 2 | 3 | 4 | 5 |
| Ability to solve a problem collaboratively | 1 | 2 | 3 | 4 | 5 |
| Ability to understand other people's perspectives, needs and values | 1 | 2 | 3 | 4 | 5 |
| **Communication** | | | | | |
| Ability to communicate sensitively taking into account other personalities and cultures | 1 | 2 | 3 | 4 | 5 |
| Ability to listen to others and consider their thoughts | 1 | 2 | 3 | 4 | 5 |
| Ability to communicate clearly and articulately | 1 | 2 | 3 | 4 | 5 |
| Ability to focus on key points during communication | 1 | 2 | 3 | 4 | 5 |
| **Culture** | | | | | |
| Language skills (English) | 1 | 2 | 3 | 4 | 5 |
| Understanding the influences and implications culture has in work life | 1 | 2 | 3 | 4 | 5 |
| Ability to evaluate perspectives, practices and products from multiple cultural perspectives | 1 | 2 | 3 | 4 | 5 |

Other relevant competences regarding the course topic, what? (No need to rate.)

_____

**Questions related to assessment methods**

| | | | | | |
|---|---|---|---|---|---|
| 7. How well did the case study method contribute to your learning? | 1 | 2 | 3 | 4 | 5 |

8. How well did the case study method fit for assessing these competences?

| | | | | | |
|---|---|---|---|---|---|
| Collaboration and knowledge management | 1 | 2 | 3 | 4 | 5 |
| Communication | 1 | 2 | 3 | 4 | 5 |
| Culture | 1 | 2 | 3 | 4 | 5 |

9. Do you think another method would have been better instead of case study? What and why?

_____

_____

10. Do you have any other suggestions related to the assessment methods and organization of the course?

_____

_____

# APPENDIX 4: INTERVIEW ON OPINIONS REGARDING THE GLOBALIZATION COMPETENCE ASSESSMENT FRAMEWORK

**Demographic information**

1. Respondent: _____
2. Age: _____
3. Sex: _____
4. Country: _____
5. Institution _____
6. Position: _____

**QUESTIONS**

**Globalization competence assessment**

1. Is there a need for more globalization studies in our IS field?
2. Do you feel there is a need for improvement in the IS curriculum regarding studies preparing students for globalization?
3. What is your opinion on promoting the assessment of competence?
4. In your opinion, what are the best methods for assessing (globalization) competence in the IS field?

**The Globalization Competence Assessment Framework**

5. At first glance, what thoughts does the framework raise?
6. Do you think the framework will be useful for the future? (1-5)
7. How understandable/clear does the framework seem? (1-5)
8. Any other comments or recommendations regarding the framework and globalization competence assessment?

**Usability of the framework (questions to the course instructor only)**

9. What is your opinion on the usability of the framework? (1-5)
    a. Was the use of methods in the framework instructed clearly?
    b. How useful did you find the sample assessment plan and written proposals?
    c. Were you able to implement the proposals?
    d. Do you have any other comments on usability?
10. What is your impression on the reliability of the framework – reproducibility and comparability?