

# A Comprehensive and Conceptual Framework of Graduates Meta-Competencies

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Recently, graduate employability received greater emphasis as universities strive to meet one of the critical components of a university's reputation and ranking: graduate outcomes and the ability for graduates to find a job after graduating. Most past studies have explicitly identified various competencies that can enhance the level of employability of graduates which relates to meta competencies. Therefore, this study sets to explore the domains and elements that form the competency-based learning objectives which focuses on enhancing a graduate's employability. Besides describing an authors' understanding of current literature on graduates' competency through critical comparison of dominant views presented in research literature, this paper also highlights the key domain of intercultural competency which could advance the employability of graduates. Finally, this paper proposes a comprehensive conceptual framework for graduate employability, competency-based learning objectives which could potentially guide universities in devising curriculum approaches that prepares graduates for employability.

**Key words:** *competency, employability, learning objectives.*

## **Introduction**

Higher education is growing rapidly due to economic and cultural globalisation demands. In this regard, higher education providers (HEPs) are facing ongoing demands by governments, students and other stakeholders on an unprecedented scale for producing holistic and work-ready graduates who have the knowledge, attributes and skills to fulfil the continuously changing needs of industry and market demands (Moolman, 2017). Hence, a graduate's employability is seen as a measure of higher education quality. In order to be work-ready graduates, they should be competent in various areas such as subject-matter and 'soft-skills'. Therefore, it becomes essential now for HEPs to respond to matching university graduates' competencies with employers' expectation. The competence concept is vital for understanding employability (Nilsson & Ellstrom, 2012).

Competence is defined as the combination of knowledge, skills, attitudes and abilities that enable well-performing individuals to perform tasks and roles (McClelland 1973; Chouhan & Srivastava, 2014). The lack of competency among graduates makes graduates less marketable when seeking employment in the areas of commerce and industry (Alias, Mohd Hamzah, & Yahya, 2013). This paper synthesises and presents an overview of current literature on a graduate's competency. Then, a comparison of dominant views by different authors is presented before an integrated and flexible conceptual framework of competency-based learning objectives which could potentially guide curriculum developers at HEPs to devise curriculum approaches that are responsive to enhancing a graduates' employability. A competency approach provides greater clarity for the HEPs about what is required in order to meet the job market demands. By breaking the requirements of the job into elements of competency, the HEPs can determine the appropriate method to attain the objectives as well as assessing graduates against each competency.

## **The Concept of Competency**

Competency is defined as a learning outcome that enables graduates to engage in work-related activities using the right combination of knowledge, skills and attitudes (Geressu, 2017). This concept of competency is vital for producing holistic and competent graduates who can compete in the job market. According to Mansfield (2004), competence can be viewed from three aspects, which include: (a) outcomes that refer to a standard that explains what employees need to do, (b) tasks performed which refers to the current and relevant knowledge and skills that are essential to carry out certain activities, and (c) personal characteristics which refers to one's behaviour or self-image.

Improved employability can benefit both the individual and the government as it provides better returns on public investment (Moolman, 2017). Therefore, many governments,

particularly in Australia, Canada and the UK, have to pay serious attention to producing competent and skilled graduates who are work-ready (Nilsson & Ellstrom, 2012). Furthermore, it is evident that universities producing the most employable graduates have the potential to attract more students compared to others (Moolman, 2017).

Despite many efforts to produce holistic and work-ready graduates, experts have found that graduate unemployment is high as graduates were not adequately equipped with the skills employers expect (Grapragasem, Krishnan, & Mansor, 2014). This view is supported by Husain & Mokhtar (2015) and Sloka et al. (2015) who indicated that most graduates are lacking sufficient context-based industrial training, lack of problem-solving skills, job-hopping and lack of confidence to enter the workforce (Husain & Mokhtar, 2015; Sloka et al., 2015). Accordingly, Hanapi, Kamis, Kiong, & Hanapi (2016) also reported graduates' incompetency to meet employers demands asserted that this problem relates to the mismatch between higher education academic orientation and employers' expectations. Hanapi et al. (2016) confidently suggested that the curriculum at higher education institutions needs to be flexible and responsive by integrating the essential elements for workplace success. Their suggestion echoed MQA's (2014) statements that the primary purpose of curriculum is to bridge identified gaps by focusing on opportunities to improve the quality of the program.

To better prepare students for an increasingly competitive market, higher education institutions are encouraged to consult with students, employers, faculty members and graduates in designing curriculum structure that explicitly highlights the key learning outcomes to be achieved (Geressu, 2017). This partnership-collaboration helps curriculum developers at higher education institutions to ensure that their programs successfully address key elements of competency expected by employers and meet the ever-changing needs of the industry (Seng, 2019). Critical review of the literature revealed that there is a relationship between graduates' competence and graduates' employability (Ab Rahman, Muhamad Hanafi, Ibrahim Mukhtar, & Ahmad, 2013; Moolman, 2017; Geressu, 2017; Ridzwan et al., 2017). This has been realised for three decades when, in 1986, the National Council Vocational Qualifications (NCVQ) was established to evaluate key graduates competencies and its relevancy to employability (Ab Rahman et al., 2013).

In relation to this, it is important for graduates to be evaluated to determine whether they are competent and meet the learning objectives set by the program (MQA, 2013). In Malaysia, MQA (2013), an entity that is responsible for quality assurance of higher education for both the public and the private sectors has outline that the minimum level of achievement at the end of a course or program: (a) cognitive taxonomy (Bloom & Englehard, 1956) – which refers to the knowledge element, (b) psychomotor taxonomy (Dave, 1975) – which refers to skill element, and (c) affective taxonomy (Krathwohl, Bloom & Masia, 1973) – which refers to the attitude element. This taxonomy is widely accepted as a measurement of multi-

dimensional learning (Mcneil, 2011). These three elements are crucial in assessing a level of graduate competence (Othman, 2012). The role of taxonomy of objectives is considered to be one of the most important elements in curriculum design and the drafting of learning outcomes and objectives (Hyder & Bhamani, 2016).

### **Conceptual Approach to Competencies**

Competency is the ability to practice or apply the set of related skills, knowledge and abilities required to accomplish critical tasks in a defined work setting. Competencies often serve as the foundation for skill standards that specify the level of skills, knowledge and abilities needed for success in the workplace as well as possible measurement criteria for assessing competency achievements (Abd Samad, Wan Ahmad, Sern, Harun, & Mohd Noor, 2018). Similarly, competencies is also defined as the applied skills and knowledge that enable people to successfully perform their work while learning objectives are specific to a course or instruction (Mustaza, Hussain, Husain, & Mokri, 2012). Most importantly, competencies not only identify the outcomes, they also provide students with a clear map and the tools to reach them (Uden, 2012).

Competencies and learning objectives are two closely-related educational terms. Competency generally refers to a statement that describes the desired knowledge, skills, and behaviours of a student graduating from a program. While, learning objective refers to a specific statement that describes what students should be able to do in some measurable way at the end of a learning period (MQA, 2011). In brief, learning objectives say what the learners need to know and able to do, while competencies state how to know that the learners have accomplished the objectives. Thus, these discussion leads a proposed conceptual framework that illustrates how learning objectives and competency relates as shown at Figure 1. This conceptual framework is constructed as guidance for HEPs to equip graduates with appropriate sets of knowledge, skills and attitudes for enhanced employability.

The conceptual framework in Figure 1 shows the main constructs that form the concept of competence in the learning objectives which consists of knowledge, skills and attitudes. The conceptual framework for this study is based on Delamare Le Deist and Winterton's (2005) Competency Model (Winterton, Le Deist, & Stringfellow, 2005). The Delamare Le Deist & Winterton (2005) model of Competency was modified from Cheetham and Chivers's (1996) Holistic Professional Competence Model using Bloom's Taxonomy (1956). In Delamare Le Deist and Winterton's (2005) Competency Model, competence is formed from cognitive competence, functional competence and social competence. This model is often associated with United Kingdom employment standards and is recommended in the guide to National Vocational Qualification (NVQ) assessors. Furthermore, Delamare Le Deist and Winterton's (2005) Competency Model is seen as a deliberate attempt to make standards more dynamic

by showing how different elements of competence interact with one another (Moolman 2017). Elements of cognitive competence are based on the domain of knowledge proposed by Bloom's Cognitive Taxonomy Theory (1956), whereas, the functional competence refers to the domain of skills proposed by Dave's Psychomotor Taxonomy Theory (1975) and social competence refers to the domain of attitude proposed by Krathwohl, Bloom & Masia (1964) Affective Taxonomy Theory.

The cognitive domain which was introduced by Bloom (1956), is the primary-referred domain of the Education Objective Taxonomy (Bloom & Englehard, 1956). Bloom's taxonomy of educational objectives is a tool that can be used in the wider context of education to help educators to think more precisely about what it means to teach and test for critical thinking (Riazi & Mosalanejad, 2010). Bloom's taxonomy focuses on knowledge or intellectual aspects such as theories and facts to assess a student's thinking level (Mneil, 2011). Its main purpose is to ensure that learning changes to a higher level of thinking and not merely involves the process of remembering facts (Hyder & Bhamani, 2016). In learning objectives, the cognitive domain is used to define how well information and thinking skill is learned or mastered (Hoque, 2016). In addition, Bloom's Cognitive Taxonomy Theory (1956) indirectly assists curriculum developers in determining relevant learning and assessment objectives for the program (Masrom, Hashim, Hashim, & Behak, 2018).

Next, psychomotor domains have been reviewed several times by Dave (1975), Harrow (1972) and Simpson (1972). Psychomotor domains also refer to functional competence which closely-relates to a work and output activity such as the knowledge needed to perform a task (Drisko, 2015). However, Dave's psychomotor domain is the simplest and easiest psychomotor domain in application. Psychomotor refers to a development of skills related to the use of physical activity (Dave, 1975). This skill is identified when a student improves the quality of the movement by repeating the movement repeatedly through training and practice (Othman, 2012). Othman (2012) also emphasised psychomotor skills as the components that play a critical role in improving an individual's competence. This opinion of Othman (2012) is consistent with Dave's (1975) five motor skills which addresses five different levels of psychomotor competence such as imitation, manipulation, precision, articulation and naturalisation. The elements of psychomotor competence are gained through experiential learning from initial exposure to final mastery. In the Competency Model, Delamare Le Deist and Winterton (2005) refer to functional competence as a skill with qualities of quality and quantity to perform a job.

Finally, affective domains involve aspects of spirituality that emphasise the development of the feelings, emotions, interests, attitudes, and values that exist in a student's life. According to Chivers (1996), affective domains are the ability to adopt appropriate attitudes or behaviours in work-related situations. Affective domains also describe the willingness and

ability to experience and form relationships, to identify and understand the benefits or tensions of a situation, and to interact with others in a rational and meticulous way (Winterton et al., 2005). Among the characteristics of affective domain are openness, ability to work in team, ability to handle conflict as well as personal characteristics such as high confidence, self-reliance and ability to work under pressure (Winterton et al., 2005). These affective skills elements, involving growth in emotional areas (attitude), is developed through such activities as the structured leadership of group design projects (capstone), career development activities and events (co-curricular activities), competitions and project presentations (Baharom, Khoiry, Hamid, Mutalib, & Hamzah, 2015).

Meta competence incorporates all three elements of competency in the Competency Model. Each of these competencies supports one another. Graduates with meta competencies are said to have holistic characteristics that enable them to cope with the work environment (Moolman, 2017). Similarly, Krathwohl, Bloom and Masia (1964) classified these affective domains into 5 stages namely acceptance, response, evaluation, organising and appreciation. Researchers have agreed that graduates who are affectively competent are able to respond according to employers' demands and are able to survive and thrive in the work place.

In understanding the interplays between these three domains, Delamare Le Deist and Winterton (2005) assert that knowledge is the result of the interaction between intelligence (ability to learn) and situation (opportunity to learn). From this perspective, it is suggested that the acquisition of declarative knowledge (explicit fact knowledge) must precede the development of knowledge procedures, related to the use of knowledge in a given context. The relationship of competence with knowledge emphasises the ability to have work-related knowledge and to be able to apply it effectively (Moolman, 2017). Knowledge competence also involves theories, concepts and knowledge that are not formally known but acquired through experience (Kim & Hassan, 2018).

Therefore, each hierarchy of knowledge and learning depends on the primary mental capacity, assuming that there is a transfer of general learning and acquisition of knowledge logic. Winterton et al. (2005) also stated that higher knowledge affects the level of efficiency where at higher levels, knowledge is converted into skills.

### **Contribution to Knowledge Advancement**

An increasing number of careers involve working across regions and require language skills and sensitivity towards others local cultural backgrounds. The importance of mastering intercultural competency is an invaluable asset. However, understanding and conceptualising intercultural domain remains a challenge. This relates to its vague definition, for instance, Trede, Bowles, & Bridges (2013) state that critical self-awareness, respect for diverse

interpretations of practices and the use of inclusive dialogues are key principles of cultural competence. The term intercultural competence is also often used interchangeably with ‘intercultural communication’ or ‘intercultural communicative competence’ although these terms focus specifically on communication and linguistic alertness aspects of intercultural competence (Odağ, Wallin, & Kedzior, 2015). As a result, the intercultural competency domain hardly gains attention by researchers.

Having extensively reviewed existing literature on graduate competency domains, it is evident that the cultural domain has been neglected. A point to note, in a globalised world where interactions occur in complex and multi-contextual domains with different parties, being able to respond appropriately is important. This refers to intercultural competence which describes the ability of individuals to function effectively while being sensitive towards others (Trede et al., 2013). Failure to master this competency might result in graduates being unproductive workers, causing conflict with other parties, and misconceptions about others. Although teaching in higher education has been contextualised to meet this demand, the graduate competency model barely addressed this cultural domain. Therefore, one of the most important contributions of this paper is to highlight the importance and the urgent need to focus on developing graduate intercultural competency. Our proposed intercultural domain is illustrated in Figure 1.

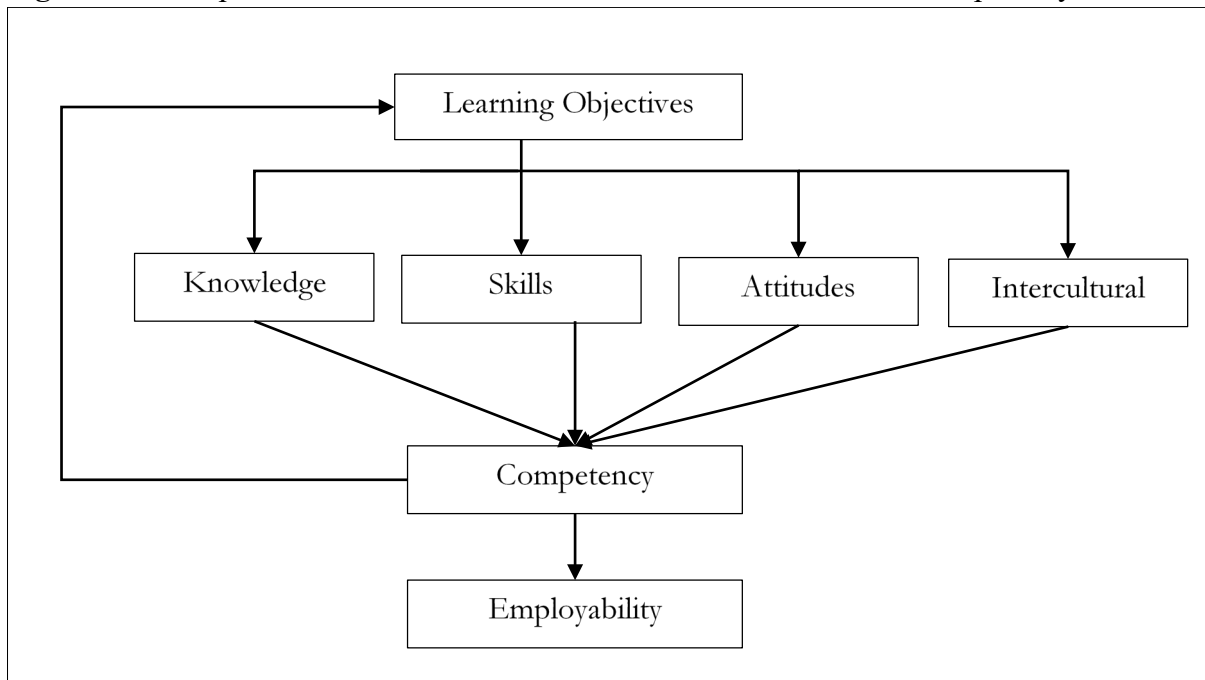
## **Conclusions**

In summary, the study has successfully determined four domains that contribute to the formation of competency for graduates’ employability. These three domains are (1) knowledge; (2) skills; (3) attitudes; and (4) intercultural. Based on the proposed framework, higher education providers and curriculum developers are recommended to define how to assess these domains of competency to ensure that it attains the learning objectives. The attainment of learning objectives that refer to the competency of graduates shows that the programs implemented by HEPs are of high quality and contribute to the provision of a competent workforce that the job market demands. Graduates with proposed competencies are said to have greater chances to be employed due to their holistic characteristics that enable them to cope with the work environment.

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**Figure 1.** Conceptual Framework on Formation Domain of Graduates Competency





## REFERENCES

- Ab Rahman, A., Muhamad Hanafi, N., Ibrahim Mukhtar, M., & Ahmad, J. (2013). Assessment Practices for Competency Based Education and Training in Vocational College , Malaysia. *Procedia - Social and Behavioral Sciences*, 112(Icepsy 2013), 1070–1076. <https://doi.org/10.1016/j.sbspro.2014.01.1271>
- Abd Samad, N., Wan Ahmad, W. M. R., Sern, L. C., Harun, H., & Mohd Noor, S. N. F. (2018). Exploring Domains and Elements for Behavioural Competency and Employability Skills. *Journal of Technical Education and Training*, 10(1), 82–90. <https://doi.org/10.30880/jtet.2018.10.01.007>
- Alias, R., Mohd Hamzah, M. I., & Yahya, N. (2013). Generic Skill Requirements: Between Employer's Aspiration and the Need of Professional Employees (Keperluan Kemahiran Generik: Antara Aspirasi Majikan dengan Keperluan Pekerja Profesional). *Jurnal Pengurusan*, 37, 105–114.
- Baharom, S., Khoiry, M. A., Hamid, R., Mutalib, A. A., & Hamzah, N. (2015). Assessment of psychomotor domain in a problem-based concrete labrotary. *Journal of Engineering Science and Technology*, 10(Spec. Issue 1 on UKM Teaching and Learning Congress 2013, June 2015), 1–10.
- Bloom, B. S., & Englehard, M. D. (1956). Taxonomy of educational objectives: The Cognitive Domain. *New York*. [https://doi.org/10.1300/J104v03n01\\_03](https://doi.org/10.1300/J104v03n01_03)
- Chouhan, V. S., & Srivastava, S. (2014). Understanding Competencies and Competency Modeling — A Literature Survey. *IOSR Journal of Business and Management*, 16(1), 14–22. <https://doi.org/10.9790/487x-16111422>
- Dave, R. . (1975). *Developing and writing behavioral objectives*. Educational Innovators Press.
- Drisko, J. (2015). Holistic Competence and Its Assessment, (June 2015). <https://doi.org/10.1080/00377317.2015.1017396>
- Geressu, B. S. (2017). Impact of Competence-based Training On Employability of Technical and Vocational Graduates in Ethiopia. *Tuning Journal for Higher Education*, 5(1), 101. [https://doi.org/10.18543/tjhe-5\(1\)-2017pp101-119](https://doi.org/10.18543/tjhe-5(1)-2017pp101-119)
- Grapragasem, S., Krishnan, A., & Mansor, A. N. (2014). Current Trends in Malaysian Higher Education and the Effect on Education Policy and Practice: An Overview. *International*



*Journal of Higher Education*, 3(1), 85–93. <https://doi.org/10.5430/ijhe.v3n1p85>

Hanapi, Z., Kamis, A., Kiong, T. T., & Hanapi, M. H. (2016). Jurang integrasi kemahiran employability di Malaysia : Satu kajian empirikal graduan kejuruteraan Kolej Komuniti, 3(3), 145–153.

Hoque, M. E. (2016). Three Domains of Learning : Cognitive , Affective and Psychomotor. *The Journal of EFL Education and Research*, 2(2).

Husain, M. Y., & Mokhtar, S. B. (2015). Faktor, Halangan dan Cadangan Kemahiran Employability Pelajar Kejuruteraan Di Politeknik. In *National Conference on TVET Innovation 2015*. <https://doi.org/10.13140/RG.2.1.2986.2569>

Hyder, I., & Bhamani, S. (2016). Bloom’s Taxonomy (Cognitive Domain) in Higher Education Settings : Reflection Brief. *Journal of Education and Educational Development*, 3(2), 288–300.

Kim, W. L., & Hassan, A. (2018). Instructional Technology Competencies Perceived by Technical and Vocational Education and Training (TVET) Students in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(5), 343–366. <https://doi.org/10.6007/IJARBSS/v8-i5/4107>

Mansfield, B. (2004). Competence in Transition. *Journal of European Industrial Training*, 28(2/3/4), 296–309.

Masrom, N. W., Hashim, M., Hashim, N., & Behak, F. P. (2018). Kedudukan Taksonomi Bloom Menurut Perspektif Islam. *JQSS – Journal of Quran Sunnah Education and Special Needs*, 1(1 (June)), 18–26. Retrieved from [http://ddms.usim.edu.my/bitstream/123456789/16257/1/31-Article Text-154-1-10-20180601.pdf](http://ddms.usim.edu.my/bitstream/123456789/16257/1/31-Article%20Text-154-1-10-20180601.pdf)

Mcneil, R. C. (2011). A Program Evaluation Model: Using Bloom’s Taxonomy to Identify Outcome Indicators in Outcomes-Based Program Evaluations. *Journal of Adult Education*.

Moolman, H. (2017). A Conceptual Competence-based Framework for Enhancing The Employability of Graduates. *The Independent Journal of Teaching and Learning*, 12(August 2016), 26–43.

MQA. (2011). *Garis Panduan Amalan Baik : Reka Bentuk dan Penyampaian Kurikulum*. Selangor: Agensi Kelayakan Malaysia.



- MQA. (2013). *Garis Panduan Amalan Baik : Penilaian Pelajar. Agensi Kelayakan Malaysia*. Selangor: Agensi Kelayakan Malaysia. Retrieved from <http://www.mqa.gov.my/PortalMQAv3/default/en/index.cfm>
- Mustaza, S. M., Hussain, A., Husain, H., & Mokri, S. S. (2012). Keberkesanan Kaedah Pengukuran dan Penilaian Hasil Pembelajaran-Hasil Program (CO-PO). *Asean Journal of Teaching and Learning in Higher Education (AJTLHE)*, 4(1), 61–68. Retrieved from <http://ejournal.ukm.my/ajtlhe/article/view/10505/3489>
- Nilsson, S., & Ellstrom, P. E. (2012). Employability and Talent Management: Challenges for HRD Practices. *European Journal of Training and Development*, 36(1), 26–45.
- Odağ, Ö., Wallin, H. R., & Kedzior, K. K. (2015). Definition of Intercultural Competence According to Undergraduate Students at an International University in Germany. *Journal of Studies in International Education*, 20(2), 118–139. <https://doi.org/10.1177/1028315315587105>
- Othman, M. (2012). *Tahap Kompetensi Pelajar Melaksanakan Kerja Amali Berpandukan Domain Psikomotor Simpson. Tesis Sarjana*.
- Riazi, A. M., & Mosalanejad, N. (2010). Evaluation of Learning Objectives in Iranian High-School and Pre-University English Textbooks Using Bloom's Taxonomy. *Journal for English as a Second Language*, 13(4).
- Ridzwan, C. R., Malik, S., Hanapi, Z., Mohamed, S., Hussain, M. A., & Shahrudin, S. (2017). Skills and Knowledge Competency of Technical and Vocational Education and Training Graduate. *Asian Social Science*, 13(4), 69. <https://doi.org/10.5539/ass.v13n4p69>
- Seng, L. C. (2019). Malaysia Public Universities ' Graduate Employability Policies : An Analysis of First Degree Graduates Unemployment and Underemployment Issues, (October 2018). <https://doi.org/10.5281/zenodo.2589702>
- Sloka, B., Kantāne, I., Buligina, I., Tora, G., Dzelme, J., & Buševica, R. (2015). Employers ' Needs and Expectations for Qualified Employees ( Case Study on the Opinions in One of the Regions in Latvia ). *Economics and Business*, 27(1), 69–75. <https://doi.org/10.1515/eb-2015-0011>



- Trede, F., Bowles, W., & Bridges, D. (2013). Developing intercultural competence and global citizenship through international experiences: Academics' perceptions. *Intercultural Education*, 24(5), 442–455. <https://doi.org/10.1080/14675986.2013.825578>
- Uden, J. (2012). *A Case Study of Higher Education Competency Models Utilizing an Assessment Framework*.
- Winterton, J., Le Deist, F. D., & Stringfellow, E. (2005). *Typology of Knowledge, Skills and Competences : Clarification of the Concept and Prototype*.