Diagnosing Higher Education on Purposefulness: Introducing the Employability Development and Assessment Maturity Model (EDAMM)

P. Vande Wiele, V. Ribiere and J.-L. Ermine

Abstract Employability has been on the political agenda for over two decades. The role of Higher Education (HE) in the development of employability in its learners is undeniably pertinent and with that, the Higher Education Institutions (HEIs)' ability to offer an effective developmental process in this regard shapes the current competitive climate in HE. Be it at various levels of priority, employability has furthermore emerged as a formal indicator of quality assurance in national and international accreditation frameworks for HE. Aside from their evaluative purpose, such frameworks also aspire to nurture and support a spirit of continuous improvement to the benefit of the institution, its learners and the larger society they are part of. Even though there is an abundance of literature around employability and HE which indicates the value of a holistic view and subsequent institutional address, this must be advanced to the development of practical tools that address such a holistic approach. A mechanism that simultaneously allows for diagnosing the effectiveness of the developmental process and serves as a pathway for improvement is up to date lacking. Given the importance of employability as a strategic goal for sustainable HE, the formulation of such mechanism is timely. This paper presents the current state of development of a maturity model on how HEIs can tackle employability, viewing this construct from a holistic lens. The paper will also outline future steps in order to further validate the model towards a highly robust quality assurance tool for HE.

P. Vande Wiele (✉)
Bahrain Polytechnic, Business School, Isa Town, Bahrain
e-mail: philippe.vandewiele@polytechnic.bh

P. Vande Wiele
PhDKIM, Bangkok University, Bangkok, Thailand

V. Ribiere
IKI-SEA, Bangkok University, Bangkok, Thailand

J.-L. Ermine
Telecom Business School Sudparis, Evry, France

G.B. Teh and S.C. Choy (eds.), *Empowering 21st Century Learners Through Holistic and Enterprising Learning*, DOI 10.1007/978-981-10-4241-6_18

Keywords Employability · Higher education · Maturity model · Quality assurance

Introduction

In the light of the new economic and societal realities of the twenty-first century against the backdrop of the emergence of the knowledge economy and the knowledge society, employability has become a major item on the national and supranational political agenda around the world (Oliver 2011, 2015). Additionally, economic and societal trends of globalization, increased mobility of labour and increased access to education have resulted in changed career perspectives whereby the onus has shifted to the individual in terms of career-management (Sook et al. 2012). The emergence of the knowledge economy in particular has reignited a debate that has been latent since the 1960s around how well HEIs' perform in their contribution to the development of the required human capital for societal and economic progress.

Even though acknowledged as an issue for decades, the gap between the profile of new graduates that enter the world of work and the current labour market requirements remains a topic of discussion and concern (Jackson 2009, 2013; Vande Wiele et al. 2015). The scholarly understanding of the construct of employability has changed over the last few decades whereby extensive studies on the topic have illuminated its highly complex, relative (Clarke 2008) and continuously evolving nature (Gazier 2001). Up to date, however, the construct still suffers from ambiguity around what it is. The authors view the construct of employability from a holistic perspective meaning that a person's employability concerns three influencing factors of intrinsic, extrinsic and actionable nature (Vande Wiele et al. 2014). Such view requires HEIs to give consideration to the elements inherent to the individual (e.g. competencies), elements in one's direct or wider environment (e.g. socio-economic factors) and notions around engagement and experience in employability-related context (e.g. education, work experience, and networking) when designing and an educational value offering that will deliver on its promise of employability development.

Research Problem

Even though the address of HE towards employability has been given ample attention in the literature (Oliver 2015), its notion has more often than not been treated in a compartmentalized manner. The complexity of the employability construct and the HEI as a system are likely two of the reasons why holistically systematizing the interplay between both has only scarcely been attempted (Maher 2011). Up to now, destination data have been the standard measure to evidence

employability as a result of HE (Bridgstock 2009); however, more attention is needed to evidencing the process of employability development to effectively tackle the issue (Mayur and Johnson 2014). In the light of the position employability has taken in the context of national and international quality assurance frameworks and purposeful HE; the development of a mechanism that allows for both evaluation and continuous improvement is highly relevant and timely giving rise to two research questions that frame this paper: RQ1. How can a HEI address employability? and RQ2. How can a HEI be diagnosed on its address of employability with the eye on continuous improvement?

Objectives of the Study

This paper aims to present the current state of a larger ongoing study that tackles the development of a diagnostic tool concerning HE institutional practice for employability: the employability development and assessment maturity model (EDAMM). The development of such model will identify and describe effective employability-conducive HE practices spanning across the totality of institutional activities—addressing RQ1. The descriptions will sketch different sophistication levels of the processes and approaches HEIs can take to address the goal of employability of its learners—addressing RQ2.

Research Methodology

Following a design science methodology, this study has adopted a qualitative approach for theory building through multiple case studies (Eisenhardt and Graebner 2007), principles of design science (Hevner et al. 2004) and principles of maturity modelling (Mettler 2011). The model is constructed using the three cycle approach by Hevner (2007) consisting of a central design cycle supported by a relevance cycle and a rigour cycle as outlined in Fig. 1.

Three purposefully selected case studies were developed through thematic analysis of in-depth interviews with key information, institutional documentation, information in the public domain and personal observation. The selected cases concerned undergraduate business programs spanning across three continents to avoid a one sided perspective on education. The data per case study was coded in two rounds: (1) coding according to five themes identified through extensive literature review (Vande Wiele et al. 2014) and (2) coding at theme level according to emergent subthemes. After this within-case analysis, the findings of each case were subjected to cross-case analysis in search for literal or theoretical replication logic (Yin 2012) in order to develop gradient descriptions of employability-conducive institutional practices to reflect different levels of process sophistication.

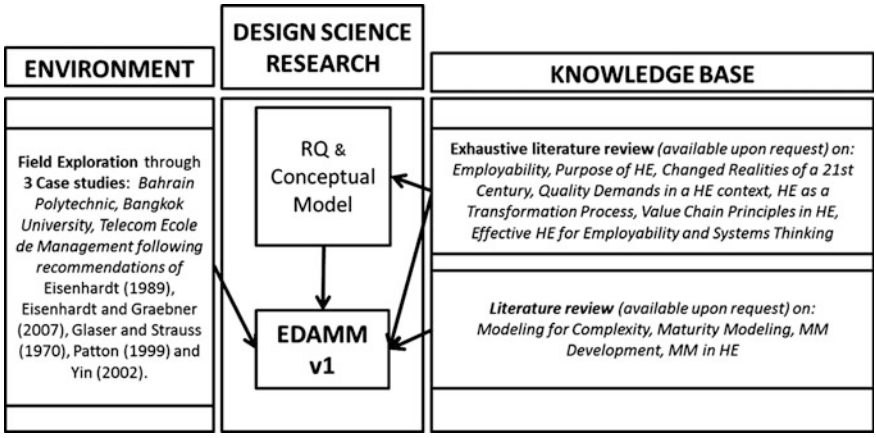

Fig. 1 Design science research approach in context of this study

Results/Discussions

The submission guidelines for this publication do not allow the presentation of the write up of the case studies or the various descriptions of subthemes that lead to the model. Therefore, the results will be presented in a summarized and synthesized manner by means of presenting the current, most up to date version of the EDAMM (Table 1) and a general overview and outline of the model's components and content. The case studies identified five general levels of process sophistication and five themes with a total of twenty-two subthemes amounting to a structure as presented in Fig. 2.

These allow to comprehensively describe an institutional process to address employability, addressing RQ1. Maturity modelling from a potential-performance-perspective, following the perspective of Crosby (1979), allows not only for evaluating a process but also outline potential pathways forward towards improving quality results. Adopting such approach fits well with a suggestion towards answering RQ2.

Curricular activities concern the academic dimension of the transformation process for which the following five criteria were found to make an account of its composition: 'Teaching and Learning', 'Outcomes', 'Faculty', 'Curriculum Development' and Curriculum 'Design and Course Sequence'. Given the fact that curricular activities are considered as core to the HEIs' value chain (Cummings and Shin 2014), it is only obvious that this dimension is recognized as fundamental to the transformation process for employability. It is furthermore clear that an embedding approach is asserted as far more desirable compared to a bolt-on approach. Teaching and Learning must be student centred, authentic, collaborative, reflective and experiential. The holistic nature of employability must be used to craft the curricular outcomes. A faculty of academics and practitioners typically

Table 1 Employability development and assessment model

	Curriculum	Support services	Industry relations	Quality measurement	Leadership
Traditional	A theory dense curriculum that is delivered and developed by pure academics in the field through tutor-centred mechanisms that focuses on theory acquisition. Programme design and development does not consider employability factors beyond theoretical knowledge	Support services are very scarce, understaffed, poorly communicated and typically limited to ad hoc activities around careers. Engagement of internal or external stakeholders is low to non-existent and the services contribute at best only minimally to the development of employability	There is no formal or systematic mechanism around the development of Industry relationship because it is not valued as pertinent towards the building of employability of the graduates. Existing relationships are passive and superficial, providing few insights in the labour market	Quality control around employability is not considered important or beneficial for improvement. It is addressed through a compliance approach using simplistic destination data for reporting purposes	Employability does not have a formally articulated strategic place in the core or supporting activities of the HEI. It is not part of the organizational culture, and employability is not seen as a potential competitive advantage
Espoused	The curriculum is for its majority focused on theoretical knowledge with some application through low-level authentic learning approaches linked to some general abilities in the field of study. The curriculum is generally informed by the external environment and designed, delivered and controlled by academics	Support services consist of a series of activities particularly oriented towards employment upon graduation. The activities are not systematically organized or institutionally orchestrated. Engagement of learners is overall limited and the results of the efforts are not very impactful	Industry relations develop rather organically at departmental level than systematically. The relationships are mainly conversational in nature serving primarily the institutional rhetoric and PR purposes. The connection with industry only limitedly impacts the approach of the HEI to the	Quality considerations around employability are predominantly considered by articulating espoused quality vs requirements of the labour market. Expressed through destination data and justified by very general, practice-oriented and highly sematic measures in terms of the process that is in place	Employability is recognized as a potential competitive advantage but the institution lacks implementation of strategic discourse. Relevant organizational structures and processes exist but are inactive or ineffective. The organizational culture does not capture the concept of employability beyond semantic rhetoric. Good

(continued)

Table 1 (continued)

	Curriculum	Support services	Industry relations	Quality measurement	Leadership
	with minor industry experience		development of its value offering	Employability is included in institutional quality discourse but is only sporadically used as a measure or driver for improvement	practice around employability is suggested but experiences difficulty in terms of uptake or adoption at institutional level
Enacted	The curriculum is student-centred and focused on the application of knowledge. It is realized through learning experiences across a gradient of authenticity by faculty members with considerable industry experience teaching in the later part of the programme. The programmes are informed by field specific labour market requirements resulting in curriculum that is oriented towards the development of field or industry specific competencies	Systematic, formally planned approach to a variety of activities supporting employability by a formally trained department. Involvement of external stakeholders (participation or information exchange) is the norm and resulting in meaningful opportunities for learners to enhance their employability. Engagement of learners is most common among seniors	There is an institutional department for industry relations to support the departmental efforts. The relationship is developed as a partnership of information exchange to inform for a meaningful HE value offering with occasionally highly invasive collaboration	Quality in terms of the process is given attention through the identification of measures for quality control. Employability is actively included in the quality management of the curricular practices alongside with some minor consideration that is given to the monitoring of support activities. Analysis and reporting is happening in various departments in isolation from one another and lacks a systematic approach and institutionalized mechanism to make it	Employability is a formal part of the strategic plan to strengthen the institution's competitiveness and its fit for purpose. The organizational culture reflects commitment and enthusiasm around employability development in pockets of curricular activities, but lacks organization wide buy in. The organization shows commitment towards employability as a formal priority through endorsing an institutional approach to employability based on

(continued)

Table 1 (continued)

	Curriculum	Support services	Industry relations	Quality measurement	Leadership
				feed into a larger plan for improvement	best practice, designated structures and relevant associations with external entities
Integrated	With employability as its central tenet, a wide variety of internal and external stakeholders are involved into the design, development and delivery of the curriculum that aspires to instil general, field specific and career competencies in its learners. The faculty involved in the development and delivery of the programme has strong currency with industry practice	Support activities are governed by qualified experts in career services and treated as an integral part of the institutional transformation process for employability. Services are developed and delivered through high involvement of relevant internal and external stakeholders. Engagement of learners is high and the results around career management skills uptake, opportunities for experience and graduate employment are significant	The institution addresses industry relations through a basic relationship management system resulting in synergistic relationships with clear goals and deliverables. Industry is highly involved in strategic and operational sides of curricular and support activities	Quality around employability development is managed throughout the transformation process in a holistic manner. Detailed data from a comprehensive set of stakeholders is collected and analysed in an institutionalized systematic way towards monitoring both process and outputs of all relevant activities. Reporting results in action plans for quality improvement that fit in an institutional quality improvement plan	Employability is viewed through a holistic lens and considered a strategic priority. It is institutionally contextualized through the development of action plans for each relevant department whereby decision-making is highly driven by cascading employability objectives. Employability is truly part of the organizational culture and a central tenet in many activities involving internal and external stakeholders. Good practice in context of the construct is considered the norm and best practice is

(continued)

Table 1 (continued)

	Curriculum	Support services	Industry relations	Quality measurement	Leadership
					institutionally celebrated
Optimized	The curriculum evidences best practice and effectiveness in terms of design, development and delivery for employability towards a highly effective approach of developing lifelong learners. The learning environment is transformational and consistently produces well balanced individuals with a holistic set of competencies relevant for the economic and societal realities of today and the future. The curriculum is continuously realigned with industry and delivered by a hybrid faculty of cutting edge practitioners/educators with a good sense of career guidance	Support activities are highly aligned and responsive to the economic and societal realities and form part of the knowledge body of the organization around developing employability in the learners. The staff is highly current with recruitment and talent management practices in industry. Engagement of learners is very high and includes co-creation of service value. The results are highly significant in terms of developing very impactful career management skills and facilitating the securing of highly meaningful employment opportunities	The institution uses a sophisticated knowledge exchange system to manage its industry relations in order to advance a sustained mutually beneficial relationship. Industry becomes the demanding party for collaboration and partnerships, resulting in a leveraged network towards securing support, the creation of opportunity and a highly competitive profile in the HE landscape	The institution continuously monitors the transformation process for its development of employability against a highly up to date objective of industry and societal measures inclusive of professional accreditation in both industry and educational context. Using highly detailed and comprehensive data, it continuously fine-tunes its process and is highly responsive and agile towards economic and societal dynamism. The institution is considered as a high-level benchmark in terms of HE and employability	Every organizational activity gravitates towards employability development which is considered as the primary purpose of the HEI. The organization has staffed its core and primary supporting activities around employability development with people who are well experienced in realizing employability through HE resulting in employability being woven into the organizational fabric. The institution drives the cutting edge around employability development through incremental and radical innovation

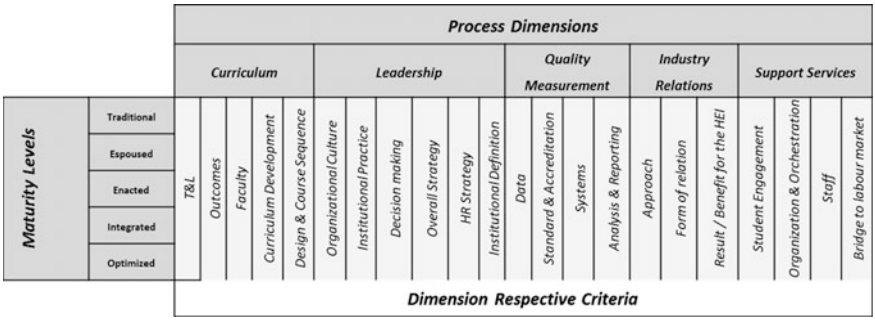

Fig. 2 EDAMM v1 structure

better reflects the realities of the twenty-first century, whereby through adjunct faculty the institution is more agile to attune to current industry practice and additionally gives learners opportunity to network in a professional environment. Curriculum Design and Development must use a scaffolding approach towards competency development towards the development of a 'whole' professional. Through consultation with a wide array of stakeholders (internal and external), the institution can further strengthen its currency with socio-economic trends.

The 'Leadership' theme captures the management-related practices concerning the totality of the institution which breaks down into 'Organizational Culture', 'Institutional Practice', 'Decision-Making', 'Overall Strategy', 'HR Strategy' and 'Institutional Definition'. The Leadership theme confirms the place management practice has been attributed in the value chain according to the literature (Pathak and Pathak 2010; Cummings and Shin 2014). This paper approached leadership as the manner in which an organization as a whole navigates the quest for and effective employability transformation process. With institutional commitment as a key factor, the daily practice of the organization must reflect the inclusion of employability throughout the organizational modus operando whereby it is embraced by all participants. Institutional practice is as much about doing things right as it is about building knowledge capacity for future success with employability as a driving factor to decision-making, strategic direction and competitive positioning. The availability of relevant organizational expertise is equally fundamental warranting carefully crafted HR practices around recruitment, performance appraisal and professional development. Finally, particularly in the situation where a HEI is embarking on a path of change in terms of addressing employability, attention must be given to the manner in which the institution defines employability, since it directly affects common understanding and consequential actions.

'Quality Measurement' concerns the thematic activities around quality assurance and improvement in an employability context. Since employability is often referred to as one of the most important quality measures for the HE graduate-product (Reichelt and Schreier 2010; Eurydice 2014), its emergence in the model is not

surprising. This component was found to consist of four underlying elements, i.e. 'Data', 'Standard and Accreditation', 'Systems' and 'Analysis and Reporting'. In order to meaningfully appreciate the quality of HE transformation process to employability, various sorts of data are required, i.e. context, process, outcome. The EDAMM arguably adequately addresses the concern raised by Maher (2011) around the lack of consideration for an institutional approach and Bridgstock's (2009) observation of the sole attention to destination data. A quality control mechanisms should consists of a systematic collection process involving internal and external stakeholders guided by key metrics that place employability transformation central to the conception of quality. Analysis and reporting needs to happen at the right level in order to result in actionable information and knowledge that effectively flows through the organization. Standards should be informed by credible and meaningful accreditation and quality assurance bodies relevant to the discipline in question.

As much as the potential value of industry to the employability transformation process is intuitively apparent from the above discussion, all three case studies reiterate its pivotal role, hence the theme 'Industry Relations'. Three criteria have been identified in order to break this component of the transformation process down, i.e. 'Approach', 'Form of the Relation' and 'Benefit/Result for the HEI'. The Approach must be systematic with effective initiation and development mechanisms towards meaningful and sustainable relationships with industry. Considering the 'Form of the Relationship' each of the case studies championed the idea of industry as partners in the pursuit of win-win and ultimately synergistic situations. Benefits for the HEI can range from straightforward input through collaboration in and on the process all the way to recruitment of graduates.

Support services refer to the transformational activities that are directly career oriented yet not necessarily traditionally curricular in nature. To explicate the finer detail of this component of the transformation process, the study has identified 'Student Engagement', 'Organization and Orchestration', 'Staff' and 'Bridge to Labour Market'. Learners' engagement with the support services, through its repeatedly reported challenging nature, was concluded as instrumental to this dimension. Careful orchestration of support activities with the rest of the transformational process and well-organized activities support the realization of a meaningful value proposition to the learners. Professional development of staff in order to create the needed knowledge bases to effectively realize support is highly instrumental to the success of this dimension. Finally, effective support services go back to its capacity to increase the learners' exposure to the workplace and their field in both learning and career-related contexts on the one hand, but equally to assuming a pivotal role in enabling an employability-related knowledge flow in the organization.

Even though the objectives of this paper can be argued to have been met, the content and applicability of the model, however, require further validation in order to be confident in answering both research questions rigorously, particularly RQ2.

This will be addressed in the conclusion section by outlining future next phases in this research endeavour. To comply with the paper guidelines, the authors have opted to limit the description to the theme level[1] across the five maturity levels following typical maturity model development practice (Mettler 2011).

Contributions of the Study

A first contribution of this study is the strengthening of the methodological approach of design science to produce knowledge artefacts and in particular maturity models. This pragmatist methodology is rather novel compared to the longer standing traditional methodological lenses applied in the research field of theory development and modelling for complexity. A second contribution is the development of a model that considers and outlines the complexity of the HE process and its address of employability by means of identifying and qualifying critically relevant activities to employability development and assessment at an institution wide level. This contributes to the body of knowledge around effective HE practices for employability by investigating a variety of operational subdomains of HE such as curriculum, support activities, quality control, leadership and industry relations. A third contribution concerns the introduction of maturity modelling in the context of employability and purposeful HE. Maturity modelling has been widely used for diagnosis, process quality control and improvement in a variety of fields, inclusive of HE (Vande Wiele et al. 2014), but is a novel approach in the context of quality assurance for employability, addressing a dire need in today's HE landscape.

Conclusions

This paper has concisely reported on the first phase of an in-depth approach to developing a mechanism to diagnose the address of HEIs to employability and simultaneously inform for improvement. This phase concerns the combination of exhaustive literature review and three case studies towards the design of a first version of the EDAMM. The second phase of the study has as its objective the validation of the model through expert consultation and scrutiny by means of a Delphi technique to result in the proposal of a valid diagnostic model for quality assurance in the context of purposeful HE for the twenty-first century.

[1]For in-depth description of the subthemes, contact the corresponding author.

References

Bridgstock, R. (2009). The graduate attributes we've overlooked: Enhancing graduate employability through career management skills. *Higher Education Research and Development, 28*(1), 31–44.

Clarke, M. (2008). Understanding and managing employability in changing career contexts. *Journal of European Training Industrial Training, 32*(4), 258–284.

Crosby, P. B. (1979). *Quality is free: The art of making quality certain*. New York: McGraw-Hill.

Cummings, W. K., & Shin, J. C. (2014) Teaching and research in contemporary higher education: An overview. In *Teaching and research in contemporary higher education* (pp. 1–12). Springer: Netherlands.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal, 50*(1), 25–32.

Eurydice. (2014). *Modernisation of higher education in Europe: Access, retention and employability 2014, eurydice report*. Education and Training, European Commission.

Gazier, B. (2001) Employability: The complexity of a policy notion. In P. Weinert, M. Baukens, & P. Bollerotet (Eds.), *Employability: From theory to practice* (pp. 3–23). NJ: Transaction Books New Brunswick.

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

Hevner, A. R. (2007). A three cycle view of design science research. *Scandinavian Journal of Information Systems, 19*(2), 87–92.

Jackson, D. (2013). Business graduate employability—Where are we going wrong? *Higher Education Research & Development, 32*(5), 776–790.

Jackson, D. (2009). An international profile of industry-relevant competencies and skill gaps in modern graduates. *International Journal of Management Education, 8*(3), 29–58.

Maher, A. (2011). Employability statements: A review for HEFCE by the higher education academy of the submissions to the Unistats website. *Journal of Hospitality, Leisure, Sports and Tourism Education, 10*(2), 132–133.

Mayur, S. D., & Johnson, R. A. (2014). Integrated systems oriented student-centric learning environment: A framework for curriculum development. *Campus-Wide Information Systems, 31*(1), 24–45.

Mettler, T. (2011). Maturity assessment models: A design science research approach. *International Journal of Society Systems Science, 3*(1/2), 81–98.

Oliver, B. (2011). *Assuring graduates outcomes*. Australia: Australian Learning and Teaching Council.

Oliver, B. (2015). Redefining graduate employability and work-integrated learning: Proposals for effective higher education in disrupted economies. *Journal of Teaching and Learning for Graduate Employability, 6*(1), 56–65.

Pathak, V., & Pathak, K. (2010). Reconfiguring the higher education value chain. *Management in Education, 24*(4), 166–171.

Reichelt, B., & Schreier, B. (2010). Labour markets' internationalisation and the new challenges for academic education. *Public Administration, 1/2* (25/26), 58–64.

Sook, S. A., Nohria, N. N., & Khurana, R. (2012). *The handbook for teaching leadership: Knowing, doing, and being*. LA: Sage.

Vande Wiele, P., Khalid, F., Ribiere, V., & Ermine, J. L. (2015). *Employability, a topic for knowledge exchange to strategically positioning higher education institutions*. Paper Presented and Published in Proceedings, ICICKM2015, 5–6 November, Bangkok, Thailand.

Vande Wiele, P., Ribiere, V., & Ermine, J. L. (2014). A diagnosis framework for preparing future workforce in higher education. In *Proceedings IKMAP, 2014,* (pp. 198–213).

Yin, R. K. (2012). *Case study research: Design and methods* (5th ed.). Sage Publication.