

SELECTION OF TOOL FOR GLOBAL LITERACY ASSESSMENT

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Abstract: Global literacy is usually associated with knowledge on contemporary political, economic, and social issues, enabling individuals to fulfill their role as active global citizens. Several approaches to assess global literacy or global competence can be found in the existing literature. The present paper is aiming to provide critical content comparison of selected approaches to global competence/ literacy assessment and to select appropriate tool, especially for the use in the higher education context. The selection is conducted on a basis of multicriteria decision-making approach, namely analytic hierarchy process. Possible modifications of the selected tool are further discussed.

Keywords: assessment, decision-making, global competence, global literacy, tool.

1 Introduction

As the world becomes more interconnected and global, so do the demands to prepare people for life and work in this world. Professionals working in a global business environment are expected to have specific competences related to the countries where they operate, including understanding the history, culture, laws, economy, business practices and trade patterns of the target country. It also includes a broader understanding of issues common to any international work as traveling around the globe, risk mitigation, international contracts and much more. However, these expectations do not only apply to people working directly in business, but the need to integrate them into the curriculum has long been recognized in other professions (e.g., engineering) in order to be better prepared for global practice (e.g., Lohmann et al., 2006; Ortiz-Marcos et al., 2020).

Various policy institutions have recognized these trends and have developed some tools designed to assess the level of preparedness of people to live and work in the global world. A good example in this regard is the OECD, which developed a metric to assess global competence of 15-year-old pupils and added it to its Program for International Student Assessment (PISA) in 2018 and subsequently released first outcomes in 2020 (OECD, 2020). The OECD thus apparently wanted to secure its position as global governor of education by mastering comprehensive global assessments of national education systems (Robertson, 2021) and to take the role of a leader in assessing such a key interest (Andrews, 2021). However, after the introduction of these initiatives, a huge critical discussion has emerged, raising doubts especially about the methodological aspects of the concept and the universality of its use (e.g., Grotlüschen, 2018; Engel et al., 2019; Cobb, Couch, 2022).

There are also other institutionally or even individually developed approaches to assess readiness to operate in a global business context, but many of them remain unduly in the shadow of the OECD's assessment. Hence, in an effort to find the best tool for assessing global knowledge, skills and attitudes, researchers continue to look for new tools, despite the existence of a relatively broad portfolio of existing, already validated approaches. However, these approaches remain fragmented and often lack consistency especially from terminological, methodological, content as well as application point of view.

This paper aims to present and critically compare selected existing approaches to assess the readiness of young people for global practice and to provide an example of selection of appropriate approach, especially for academic purposes. The

paper follows this structure: In the following part, the notion of global competence as a broader concept in relation to global (business) literacy is introduced followed by overview of the tools designed for its assessment. The next part explains the methodology of the selection process with its subsequent implementation and discussion of the results in the follow-up part of the paper.

2 Notion of Global Competence and Global Literacy

Globally competent people are generally described in the literature as having the ability to discover the world outside their immediate environment, recognize their own and other perspectives, communicate thoughts effectively with culturally different counterparts, and take steps to improve living conditions (Mansilla, Wilson, 2020). This indicate multidimensional facet of the global competence construct that is revolved around specific components, namely knowledge, skills and attitudes as indicated in the literature even more than a decade ago. Students should first acquire in-depth knowledge about the world, especially about targeted foreign culture (Bresciani, 2008) that should be supplemented by skills consisting at least of the ability to use acquired knowledge to think critically and solve practical intercultural problems (Deardorff, 2006). Finally, students should also have positive attitudes toward other cultures formed through respect and recognition of the benefits of learning about foreign cultures (Mansilla, Jackson, 2011). Moreover, the OECD's global competence framework at the theoretical level adds the component of values that go beyond attitudes and transcend specific objects or situations (Schwartz, 2012); however, it is beyond the scope of the PISA assessment. Contentual dimensions of the global competence are traditionally built on the components of knowledge, skills and attitudes, and there is not a big discrepancy in the existing literature in this respect. On the other hand, constitution of the particular dimensions and their content that would form operational definition of global competence is far from conclusive and is reflected in various approaches to the assessment of the global competence.

Within PISA assessments the general term "literacy" is also used and indicates the ability of a person to apply knowledge and skills in key areas and to effectively analyze, justify and communicate in identifying, interpreting and solving problems in different situations (OECD, 2020). Similarly, Cakmak, Bulut and Taskiran (2017) consider global literacy to be based on knowledge associated with accessing and understanding contemporary political, economic, and social issues, enabling individuals to fulfill their role as active global citizens. The importance of the global literacy was highlighted also by King and Thorpe (2012) who included this ability among the nine most important skills that a graduate should have.

Taking into account discrepancies with regard to the content of the concept of global competence as well as its significant overlap with the concept of global literacy, for the purpose of this paper, we will not strictly separate these two concepts from a terminological point of view.

3 Comparison of Assessment Tools

Within this section of the paper, we provide the descriptive comparison of the selected approaches and tools designed for assessment of the readiness of young people for life and work in the globalized world. The selection of the tools presented below was motivated primarily by availability of the concept in the relevant literature underpinned by results of its practical application within school/ academic environment. We included two institutionally developed and two individually developed assessment tools into our furthermore detailed analysis, namely:

3.1 Global Competence Aptitude Assessment

One of the best-known dimensional approaches originally based on the study by Hunter et al. (2006) is the Global Competence Aptitude Assessment (GCAA), which is based on a joint effort of Delphi panel of experts from various fields. The model includes eight dimensions that are routed around internal readiness, namely self-awareness, risk taking, open-mindedness, and attentiveness to diversity, as well as external readiness, namely global awareness, historical perspective, intercultural capability and collaboration across cultures (Global Competence Associates, 2022). Despite the fact that it was originally intended to assess global competence of employees working in multinational companies without taking into account other target groups, it later found its application also in the academic field (e.g., Kaushik et al., 2017). For example, Schenker (2019) used this instrument to study the effects of a short-term study abroad program on university students' global competence. The GCAA is available through purchase and a web-based instrument takes from at least 30 minutes to an hour to complete, depending on individuals' knowledge about a global world. The instrument besides Likert-scale self-appraisal items includes also scenario-based and behavioral-based items to avoid bias in self-reporting. However, one of the shortcomings that restricts applicability of this instrument in its original form on a wider international scale is its focus on the U.S. environment.

3.2 OECD Global Competence Framework

Another institutionally developed approach that gained significant attentions in the literature especially in the recent years, is the concept of global competence introduced by the OECD's Program for International Student Assessment (PISA) in 2018 (OECD, 2020). The original, already conducted survey was aimed to evaluate the level of global competence of 15-years-old students in 66 countries. Hence, both instruments, namely a questionnaire bringing self-reported information and a cognitive test based on problem solving related to the intercultural and global issues, have found their transnational applicability. The questionnaire itself is publicly available and it consists of eighty items that take into account the testing time, the sensitivity of the questions and are adapted to the abilities of the target group of 15-year-old students.

3.3 Global Business Literacy Assessment Framework

A study by Arevalo et al. (2012), based on existing literature on global business education, developed a 58-item survey and applied it to evaluate undergraduate Global Business Literacy (GBL) learning outcomes reached through traditional classroom-based approach. After testing the original 58-item scale, the authors presented (within annex of their study) and applied new 40-item scale covering five dimensions of global business literacy, namely self-efficacy, willingness to learn, relationship development, technical competence and self-awareness. The authors consider their concept of global business literacy to be appropriate for assessing effective and congruent learning outcomes of university students. At the same time, this concept was recognized in the review study by Seno-Alday and Budde-Sung (2016) as the only one focusing on global business literacy assessment, in terms of content or skills.

3.4 Student Global Competence Concept

Another individually developed instrument focusing on cultivating student global competence is a three-dimensional taxonomy concept to measure global attitudes, skills and knowledge introduced and applied by Li (2013). The author believes that while the global competence of an individual is influenced by the same sets of characteristics of attitudes and skills in the similar way regardless of the respective foreign culture, the actual knowledge needed for a particular communication scenario is culturally specific. Hence, attitudes and skills were measured indirectly via 17 items questionnaire list of which is stated in the study and knowledge was measured directly by 20 multiple-choice questions focused on the context

of China and the U.S. The author believes that the instrument can be easy to use in a classroom setting to provide teachers with an idea of the actual global competence level of their students. The proposed three-dimensional structure was subsequently supported also by other studies (e.g., Liu, Yin, Wu, 2020).

4 Methodology

The aim of the present paper is besides critical comparison of selected existing approaches to global competence/ literacy assessment provide an example of selection of appropriate tool, especially for academic purposes, namely for application of this tool on a sample of students of economics, business and management within European universities. Due to existence of several partial aims of the assessment as well as some time and resource limitations, the multicriteria decision-making approach is applied. Following criteria (C) were selected and applied:

- C1: degree of coverage of global issues related to the economy and business,
- C2: applicability of the instrument in the European environment,
- C3: suitability for use in the higher education context,
- C4: costs of availability,
- C5: time for completion.

The first three criteria are rather qualitative, while the remaining two are quantitative. In order to determine the weights of the criteria, the method developed by Saaty (1980) was used. First, we compared the criteria between each other and determined the preference relationship of each pair of criteria. Besides direction of the preference, we determined also the intensity of this preference using scoring scale as suggested by Saaty (1990) and recommended also by other authors (e.g., Fotr et al., 2010). If the criterion in the row is more significant than the criterion in the column, the number of points expressing the size of the preference of the criterion in the row with respect to the criterion in the column is entered in the appropriate field. Conversely, if the criterion in the column is more significant than the criterion in the row, the inverse value of the selected number of points is entered in the appropriate field. Second, we determined the geometric means of the values in the rows of the pairwise comparison matrix (table 1) and which values we subsequently normalized to obtain the final weights of the criteria.

Tab. 1: Pairwise comparison matrix

	C1	C2	C3	C4	C5	Geometric means	Final weights
C1	1	5	3	3	1	2.14	0.34
C2	1/5	1	1/3	1/3	1/5	0.34	0.06
C3	1/3	3	1	1	1/3	0.80	0.13
C4	1/3	3	1	1	1/3	0.80	0.13
C5	1	5	3	3	1	2.14	0.34

Source: own processing

Subsequently we worked with following alternatives, namely selected global competence/ literacy assessment tools that are introduced above:

- A1: Global Competence Aptitude Assessment
- A2: OECD Global Competence Framework
- A3: Global Business Literacy Assessment Framework
- A4: Student Global Competence Concept

Again, the approach proposed by Saaty (1980) was used to evaluate the individual alternatives. The overall evaluation of individual alternatives is determined as a weighted sum of the partial evaluations of the alternatives with respect to the individual criteria. This is analogous to the procedure for determining the weights of the criteria mentioned above. However, the compared objects are not criteria, but decision alternatives. For each criterion, we created a matrix based on a pairwise comparison of variants. In the case of the first four criteria, the size of the preference of all pairs of alternatives was determined on the basis of the assignment of points from the recommended scoring scale (Saaty, 1990). In the case of the last

criterion, we assessed the time for completion of the instrument according to the number of surveyed items, while the partial evaluation of alternatives corresponds to the ratio of the number of items among each other.

5 Results and Discussion

In the table 2 we first present partial evaluations of individual alternatives with respect to individual criteria. For this purpose, five pairwise comparison matrixes are constructed, based on which partial evaluations are counted as normalized geometric means of the values in the rows of the matrixes.

Tab. 2: Partial evaluations of alternatives

	Alternative	A1	A2	A3	A4	Geometric means	Partial evaluations
C1	A1	1	1/3	1/3	1	0.577	0.119
	A2	3	1	1/5	1/3	0.669	0.138
	A3	3	5	1	3	2.590	0.536
	A4	1	3	1/3	1	0.999	0.207
C2	A1	1	1/3	1	3	0.999	0.175
	A2	3	1	3	5	2.590	0.454
	A3	1	3	1	3	1.732	0.303
	A4	1/3	1/5	1/3	1	0.386	0.068
C3	A1	1	3	1/3	1/3	0.760	0.150
	A2	1/3	1	1/5	1/5	0.340	0.068
	A3	3	5	1	1	1.968	0.391
	A4	3	5	1	1	1.968	0.391
C4	A1	1	1/5	1/5	1/5	0.299	0.064
	A2	5	1	1	1	1.495	0.312
	A3	5	1	1	1	1.495	0.312
	A4	5	1	1	1	1.495	0.312
C5	A1	1	0.825	0.412	0.381	0.599	0.138
	A2	1.213	1	0.5	0.463	0.728	0.167
	A3	2.425	2	1	0.925	1.455	0.334
	A4	2.622	2.162	1.081	1	1.573	0.361

Source: own processing

Since we dispose with quantitative data only with respect to the criterion 5, the partial evaluation of the alternatives was done on a basis of the ratio of the number of items in each questionnaire. In all other cases, we used relative pairwise evaluation, going out from the information provided in the part 3 of this paper. The calculation of the overall evaluation of the respective alternatives presented below (table 3) is realized as a weighted sum of partial evaluations using the weights calculated in the part 4 of this paper.

Tab. 3: Overall evaluation of alternatives

Criterion	Weight	A1	A2	A3	A4
C1	0.34	0.119	0.138	0.536	0.207
C2	0.06	0.175	0.454	0.303	0.068
C3	0.13	0.150	0.068	0.391	0.391
C4	0.13	0.064	0.312	0.312	0.312
C5	0.34	0.138	0.167	0.334	0.361
Overall evaluation		0.1257	0.1803	0.4054	0.2886
Final order		4.	3.	1.	2.

Source: own processing

Results of multicriteria decision-making show that most suitable for our purposes is the instrument aimed at evaluation of global business literacy developed by Arevalo et al. (2012) followed by instrument developed by Li (2013). It is done especially by their relatively high degree of coverage of global issues related to the economy and business as well as time efficiency of completion of the instrument. Some previous studies (e.g., Greer et al., 2000) have shown that, in general, shorter questionnaires are more likely to be answered than long ones. Other important aspects are also public availability of the instrument and its previous use in the higher education context, especially for the purpose of classroom-based approaches. On the other hand, relatively short compact construct of the questionnaire can lead to omission of some aspects that can be relevant in the context of global competence/ literacy. Taking into account also the time of its creation, there seems to be a need to revise the instrument in the light of current development tendencies and trends.

In recent decades, we have witnessed many radical changes taking place in the external environment, which have fundamentally influenced and shaped the views of especially young people on the global world. In this regard, it is necessary to mention especially digital communication technologies, such as online networks, social media or interactive platforms, which make it easy to connect people on the one hand but can also be a source of inappropriate content or even false news, on the other hand. Hence, cultivating media literacy, which is traditionally understood as a set of critical thinking-based skills (Bulger, Davison, 2018), can be considered an important element of engaged global citizenship (Mihailidis, Thevenin, 2013).

Another important aspect in the development of global competence is also risk-taking tendency, which is explicitly included among internal readiness personal characteristics of the Global Competence Aptitude Assessment (Global Competence Associates, 2022). In this regard, brave individuals who are willing to cope with unfamiliar environments and situations are considered to be better prepared to operate in today's global world. However, the risk-taking question when assessing global competence can be found also in other studies (e.g., Meng, Zhu, Cao, 2017).

6 Conclusion

The aim of the paper was to present and critically compare some of the existing approaches to assessing the readiness of young people to live and work in a global world and to select the most appropriate tool that we will use in our future research. Naturally, the preselection of the tools was motivated especially by our needs and limitations. Hence, we focused on tools that have already been applied on a sample of students and are relatively easily available. Taking into consideration these specific criteria, by application of analytic hierarchy process, we selected global business literacy assessment framework proposed by Arevalo et al. (2012) as the one that the best fits our requirements. However, based on different criteria, or after assigning different weights to the individual criteria, we would most probably come to a different choice.

The tool we have chosen best meets our current requirements; however, it is not without limitations. We consider it important to review the framework properly, taking into account in particular the changes in the external environment that have taken place over the last decade, and possibly to add some important new aspects, such as digital media literacy or risk attitudes. At the same time, we have to point out to the fact that we restricted our attention on tools that explicitly assess "global" competencies or literacy and omitted other tools used for evaluation of similar, closely related aspects, such as "intercultural competence", "global citizenship" etc. Hence, future research can be directed toward broader consideration of other related approaches and tools to assess these phenomena.

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