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Assessing Media Literacy Competences: Reflections and Recommendations from a Quantitative Study

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Assessing Media Literacy Competences: Reflections and Recommendations from a Quantitative Study

Abstract

The assessment of media literacy is a complex task, which might attempt to reconcile a research field traditionally developed within a critical paradigm with the task of evaluating and quantifying media literacy competences through essentially quantitative methods. Despite the non-existence of consensus regarding how to evaluate and measure media literacy, namely on the definition of its levels, this purpose is increasingly discussed and stimulated by political and regulatory stances, as well as studied within the academic world. Based on one of such attempts, a study on the media literacy competences of 679 Portuguese teenagers, this paper presents a review and a reflection on the specific challenges posed by the intent to quantitatively assess media literacy, without neglecting its core critical dimension. It concludes by suggesting methodological convergence and the continuous development of valid and reliable indicators, necessarily context and subject-dependent, as a way to improve this area of research.

Keywords: competences; media literacy; assessment; quantitative methods.

Introduction

Media literacy and competences can be regarded as concepts with a “variable geometry”, to borrow Miège’s (2017, p. 54) expression, which means they are often adapted to meet different contexts and research goals. Regarding the first concept, Potter (2010, p. 676) stated that “it is as if each person writing about media literacy conceptualizes it with a different construction of definitional elements”. Nonetheless, there is a recurrent key shared concern amidst many works and researchers within media studies: despite the existence of different approaches, media literacy can be seen as “a form of *critical* literacy” (Buckingham, 2003, p. 38), one that has been recurrently studied within an also critical paradigm (Livingstone et al., 2008).

According to Buckingham (2003, p. 36) “defining media literacy is far from straightforward”, as it goes beyond the one-on-one relationship between a person and a given text. “It entails the acquisition of a ‘metalanguage’” (Buckingham, 2003, p. 38), because this process implies an analytical understanding of broader and interrelated contexts (from different modes of communication to intertextual relations or social, economic and institutional backgrounds, for instance). However, there are particular dimensions of media literacy that can be seen as fairly widespread amidst different authors and institutions. An early example is the report of The National Leadership Conference on Media Literacy (Aufderheide, 1993), which noted that the participants agreed on a basic definition of media literacy as the ability “to

access, analyse, and produce information for specific outcomes” (p. v). Decoding and evaluation can be later found alongside this concept (Aufderheide, 1993, pp. 6-7), as more specific ways of understanding what the analysis may comprise. Production was also rearranged into two different components: encoding or providing alternative expressions (Aufderheide, 1993, p. 7). The European Commission (EC) presents media literacy in related, but not necessarily equal, terms, as “the ability to access the media, to understand and critically evaluate different aspects of the media and media content and to create communications in a variety of contexts” (Recommendation 2009/625/EC).

The Portuguese study (Pereira et al., 2015; Pereira & Moura, 2019) that sought to assess levels of media literacy competence, which is the starting point of this paper, adopted the EC definition. Therefore, media literacy was assumed to have three core elements, comprising:

- 1) the *access* to media and the capacity to *use* them;
- 2) the *critical* evaluation, understanding and analysis of the media and its contents; and
- 3) the capacity to engage in practices of mediatized *participation* and *production*.

The consummation of this mix of meaning-making and actual practices may be understood as revealing different media literacy competences (Buckingham, 2005a; Fastrez, 2010). This theoretical positioning had methodological implications. Since we expected to assess (mostly) critical competences in reading, analysing, understanding and producing media messages using a strictly quantitative method to generate levels, we had to define accurate and relevant indicators to empirically recognize and evaluate those competences – despite the absence of consensus regarding this purpose¹ and the prevalence of qualitative approaches within our references on media literacy.

Based on the Portuguese research project mentioned above, this paper intends to discuss the implications and the constraints of the use of quantitative methods in assessing media literacy as competences. It is focused on three key points:

- 1) the challenges of choosing what to evaluate;
- 2) the definition of what those under assessment should know (and, therefore, could be the matters under study);
- 3) the difficulties of quantitatively defining levels of media literacy competence.

The experiences and reflections derived from the aforementioned research project and the review of other studies are the foundations of this paper, which

¹ Annex 1 presents a brief systematization of different – theoretical and empirical – approaches on the challenge of assessing media literacy competences, highlighting differences and communalities among authors.

aims to contribute to the debate on the challenges and constraints of researching media literacy competences through the scope of quantitative methods.

Assessing young people's media literacy competences: the case of a Portuguese quantitative study

After establishing a specific understanding of media literacy, the Portuguese study faced two immediate challenges: how to coordinate it with another, also polysemic, concept – i.e., competence – and how to design a study that could consummate the research goals using quantitative methods while respecting media literacy's theoretical foundations. The next two sections elaborate on this matter.

The concept of competence

Competence is often equated with expressions such as capacities or skills: sometimes as just another word pointing towards the ability to do something, but other times as an overall idea whose dimensions are concrete capacities and skills, but also knowledge, attitudes and values (Guzmán Marin, 2012). More than just the ability to achieve a given goal, to behave in a specific way or to know how to do something, a competence would imply a context-dependent “problem-solving strategy relying on reasoning, inferences, foresights, assessing the probability of different events, reaching a diagnosis based on a set of indicators” (Perrenoud, 1995, p. 21). It goes beyond what someone knows and is able to perform; it is more than the properness of outcomes reached; it stresses the importance of reasoning, values and critical thinking; it acknowledges the structural importance of contexts – not only the ones surrounding the problems to be faced by someone, but also those that form the capital of the individuals at stake (Perrenoud, 1995, 1999). This way, it would share, in what is essential, the same paradigmatic ground of a mostly critical media literacy concept – in fact, this specific conception of media literacy can be regarded as media competence if the latter goes beyond the simple capacity to do something (Trültzsch-Wijnen, 2020).

In short, media literacy competences were not considered as something straightforwardly related to the accomplishment of a result – as if it were the single, right tool for a given purpose –, but as a critical practice, one where factually correct answers are obviously important, but also where interpretation, reasonings and meanings assume a central place. This evokes a distinction presented by Buckingham (2005b) or Trültzsch-Wijnen (2020): specific performances, especially when done in artificial contexts (such as an evaluation outside everyday practices) and in reference to someone else's standards (the evaluators, which may not translate the plethora of things those being assessed know and do), cannot be mistaken for the overall competences of a person. As the latter author puts it, “the danger inherent here is that quantitative studies on

competence measurement lead to statements that are less about an individual's actual abilities and skills than about his or her adaptation to socially desirable standards imposed by society" (Trültzsch-Wijnen, 2020, p. 116). This echoes a well-established principle in audiences research, which is closely related to media literacy and media education in general (Buckingham, 2003): when grouped strictly in quantitative terms – for example, for marketing purposes – audiences rarely have a voice of their own and their rationalized collective identity is more tributary to the choices and concerns of researchers than to *a priori* social entities whose existence would be objectively revealed by numbers and measurements (Dayan, 2005).

While the oversimplification of media literacy in partial numbers might be “significantly less than reliable” (Buckingham, 2005b, p. 32), even nonsensical if the goal is to reduce it, for example, to skills somewhat validated by the demands of the labour market, one should also consider the consequences of the lack of broader quantitative studies. For instance, their absence might hamper the awareness of existing gaps or the comprehension of the accomplishments and shortcomings of diverse media education initiatives (Ferrés Prats et al., 2012; Livingstone et al., 2012), at a time when other, more or less related competences (namely strictly digital ones²) are also being evaluated. Missing this call while quantitative measurements are a political priority might push media literacy to a secondary role within our collective lives. However, neglecting decades of research within the critical paradigm for the sake of measurement can make media literacy little more than an empty signifier.

The Portuguese study

The Portuguese study was a response to an informal call launched in 2012 by the Group of Experts on Media Literacy of the EC to carry out studies in their respective countries aimed at assessing citizens' levels of media literacy. The call was accepted by researchers of the Communication and Society Research Centre, who developed the study with a national sample of young people attending the 12th year of secondary education (the last level of compulsory education), mostly aged between 17 and 18 years old. A total of 679 youngsters, attending 46 public schools from mainland Portugal, assembled by non-probabilistic quota sampling, completed the online survey, which was the sole

² In this paper, and also in the study carried out, we do not consider frameworks on digital competence, such as the "European Framework for the Digital Competence of Educators: DigCompEdu". Although regarding them very relevant in terms of developing digital literacy skills, they follow distinct theoretical and conceptual approaches and objectives. As highlighted throughout the paper, in this work we follow a Media Literacy orientation, rooted in critical thinking and reading, analysis and production of media, with the ultimate goal of active and participatory citizenship. The media are considered much more than technologies, devices or instruments used to drive innovation in education; media literacy competences are broader than utilitarian skills. Centred on a paradigm of communication and citizenship, our approach distances itself from an instrumental view of digital skills (not taking away their importance and place in the development of fundamental skills).

research tool used³. In this research, the definition of media literacy previously discussed had necessary implications on how the other main concept at stake was envisioned: competence would not be regarded as just an effective (and more easily measured) know-how, but it would be, nevertheless, assessed.

This study sought to balance the aforementioned risks and needs. Its methods would have to be able to accommodate this particular conception of media literacy and competences, but through an essentially quantitative design, as the main goal was to evaluate (and quantify) levels of media literacy competences of a significant group of persons. As mentioned before, three main challenges emerged from this purpose:

- 1) *Choosing tools*: to choose the tools capable of substantiating the research goals;
- 2) *What to evaluate*: to select what could and should be evaluated, both in a macro (i.e., in relation to the three dimensions of media literacy) and in a micro (that is, the specific questions from the abundance of contexts and contents related to the media) sense;
- 3) *How to evaluate and quantify*: to establish how the outcomes of the assessment tool should be evaluated and quantified, in order to translate levels of media literacy competences.

The researchers established that the evaluation would comprise an overall 100-points-scale, a familiar measure within the Portuguese educational system and that would hopefully make the outcomes more intelligible beyond the study. Considering the overall results, a media literacy competences scale was defined: it had three levels, which were determined by considering the average scores and the 100 points distributed. Therefore, the students placed in Level 1 (n= 352) had scores below the total mean (29.01 points); students in Level 2 (n= 295) had results between the average and the lowest positive score (49.50 points were considered as threshold); Level 3 students (n= 32) were the ones with positive scores – i.e., 50 points or more (Pereira et al., 2015; Pereira & Moura, 2019). Until reaching these final stages, however, different and important decisions had to be made. In the next sections, following respectively the three challenges outlined above, we reflect on some of these decisions and their methodological implications, whilst considering the methodological choices of other studies.

How are media literacy competences to be quantitatively assessed?

The research design of the evaluation would have to ensure the theoretical coherence between our specific concepts of media literacy and competences and

³ The study was developed in partnership with the Media Office (extinct in 2015) and the School Libraries Network (SLN), which funded it. The SLN managed the filling out of the surveys within school premises. No researcher was present when the questionnaires were being completed.

the measures to be used within the survey. Hence, despite the undeniable importance of knowledge and/or attitudes, as well as their use in earlier studies (e.g., João & Menezes, 2008; Primack et al., 2006; DTI & EAVI, 2011; Ashley et al., 2013) and the greater familiarity in validating results from closed measures such as scales or multiple choice/dichotomous questions, the Portuguese study took, for the most part, a different path. Much like previous research (e.g., Benavente et al., 1996; Hobbs & Frost, 2003; Lopes, 2013), it envisioned open-ended, task-solving questions as being at the heart of the evaluation of literacy competences. This option brings to the evaluation not only the properness of the (expectably more diverse) answers, but also the chance to consider other traces of competences present in the written argumentation, which would be unavailable in close-ended questions. Recalling the concept of competence at stake, it goes beyond the accomplishment of a given outcome; it also considers interpretation, reasonings and meanings in relation to specific problems. If, as Buckingham (2019, p. 55) mentioned, "critical thinking is a reflexive process", any study willing to encompass it must give its sample some leeway to express it, even if this represents not so controlled and predictable data. Therefore, it was considered that a test mostly comprising task-solving, open-ended questions would be the most suitable option to achieve a higher degree of theoretical validity. Table 1 summarizes the dimensions and general competences assessed and presents examples of questions posed by the online survey.

Dimension	General competences	Goals	Measures	Examples of questions
1. Critical evaluation, understanding and analysis	1.1. To interpret and classify media contents, institutions and players	1.1.1. To identify and interpret the relevance of specific parts in a given media content	Four open-ended questions	<p>Q1.a. [Considering a news piece on advertorials and how these can violate the legal and ethical boundaries between journalism and advertisers] Which incompatibility is mentioned within the text?</p> <p>Q1.b. [After watching an excerpt of the TV series Crossing Lines, which featured product placement] How do you evaluate the way this scene was shot? Did you notice any particular concern about how the images were framed?</p>

		1.1.2. To identify, compare, distinguish and/or characterize media genres and contents	Two open-ended questions and one multiple-choice question	<p>Q1.c. [Considering a news piece on advertorials and how these can violate the legal and ethical boundaries between journalism and advertisers] The text mentions something called “advertorials”. What does this word mean to you?</p> <p>Q1.d. [Regarding an opinion column properly identified as such] The following text was written by the journalist X. How do you label it? [Choose one of the following options] News piece Feature Opinion article</p>
		1.1.3. To identify, compare, distinguish and/or characterize media institutions and players	Four open-ended questions and one multiple-choice question	<p>Q1.e. [Respecting the Portuguese Public Service Media] Can you identify the names of its different media?</p> <p>Q1.f. [Considering a simulated Google search] How do you label this site? [Choose one of the following options] Social network Search engine Content aggregator Online store</p>
	1.2. To understand the contexts of media contents, institutions and players	1.2.1. To identify the ownership of media institutions	Two open-ended questions	Q1.g. [Respecting the Portuguese Public Service Media] Who owns these media?
		1.2.2. To acknowledge the existence of different/alternative media and platforms	One open-ended question	Q1.h. [Considering a simulated Google search] Mention an alternative to this site.

		1.2.3. To identify media funding modes	Two open-ended questions	Q1.i. [Respecting the Portuguese Public Service Media] Mention one example of how this media is funded.
		1.2.4. To identify media regulatory instances	One open-ended question	Q1.j. Consider that you are listening to a radio show, and you feel that it violated one or more of your rights. Do you know any institution of person to which/whom you can lodge a complaint? [If so] Mention that institution or person.
		1.2.5. To acknowledge the existence of copyrights and the need to identify the sources used - <i>Attitudes</i>	One scale question and one open-ended question	Q1.k. When you do a school assignment, do you reference the sources that you used? [Choose one of the following options] No, because I don't know how to do it No, because I didn't know we should do it No, because I don't think it is important Sometimes, when I remember Always, it is important to do it Q1.l. How do you present the references?
	1.3. To evaluate media contents, institutions and players	1.3.1. To acknowledge the different media available as possible tools	Three open-ended questions	Q1.m. Imagine that you are running for president of your student union. Which media could you use to communicate with your schoolmates? How could you use them? Q1.n. [Regarding data on TV audiences] Imagine that someone from your family develops something that could be advertised to elderly people. Considering the data presented,

				which TV channel/time slot would you recommend for investing in an ad?
		1.3.2. To evaluate the origins and contexts of given media contents, institutions and players	Two open-ended questions	Q1.o. [Considering a simulated Google search] Suppose that you must do a school project on tree felling in Portugal and that by doing an Internet search the following sources of information appear in the top five places. 1. Indicate the two sources of information that you would choose for your schoolwork. 2. Explain your choice.
		1.3.3. To evaluate specific goals of diverse media contents, institutions and players	One open-ended question	Q1.p. [Respecting the Portuguese Public Service Media] What is it and what are its purposes?
		1.3.4. To suggest alternative media contents, institutions and players	One open-ended question	Q1.q. [Considering a news piece on advertorials and how these can violate the legal and ethical boundaries between journalism and advertisers] What other kind of sources could be present?
2. Production and participation	2.1. To participate using the media	2.1.1. To use different media to participate and interact with others – <i>Practices</i>	One dichotomous question	Q2.a. Within the last year, did you do any of the following [13] activities? [Examples] To comment on a journalistic site/social network To sign an online petition To comment on a brand site/social network
	2.2. To produce	2.2.1. To create contents – <i>Practices</i>	Three dichotomous questions	Q2.b. Within the last year, did you do any of the following [13] activities? [Examples] To record a video To

				produce a podcast To create a blog
		2.2.2. To be able to explain different production stages of their own creations	Three open-ended questions	Q2.c. Do you collaborate with any of your school media? Q2.d. If you have recorded a video, explain the steps you take between conception and possible upload

Table 1: Subjects assessed by the Portuguese study (Pereira et al., 2015; Pereira & Moura, 2019), its goals, measures and examples of questions.

Although open-ended questions were the most employed measures, in consonance with the concept of competence adopted, other instruments were used. Multiple-choice questions (e.g., Q1.f.) were designed essentially to assess factual knowledge. Besides, one question focused on attitudes towards copyright (Q1.k.) and four on production and participation practices (Q2.a. to Q2.d.).

Despite task-based assessments create an opportunity to encourage the expression of diverse competences, this kind of stimulus does not represent a perfect window to someone's competences. To begin with, the online survey used had its own affordances, it created its specific context. Therefore, it also narrows down how deeply context-dependent concepts, such as media literacy and competences, can be studied and their outcomes considered. A striking feature is the fact that this kind of performance-based testing relied on written answers. For instance, Q1.m., which will be recalled below, implies the possibility of using other ways of expression besides writing. Nevertheless, its evaluation would be dependent on the written skills of the youngster, as well as their willingness to express them in substantial written answers. This context does not necessarily equate to the ones presented by everyday life, where they can express a plethora of competences in other media format and languages, and within collective, rather than individual, settings – as implied by question itself. This has a necessary impact on what can be properly evaluated by the research tool used.

The challenges of choosing what to evaluate. What media literacy dimensions could (and should) be assessed?

All media literacy dimensions necessarily mobilize a set of competences which can be studied, but not through the same methods, argued the Portuguese study. That is, the research design of the evaluation sets conditions for what competences can be validly assessed. As shown in Table 1, the critical dimension had a prominent position within the evaluation. Two reasons justify this fact: its prevalence in media literacy studies and the definition of

competence adopted. These reasons also explain the fewer cases of production and participation competences under evaluation and the total absence of the ones related to access and uses. In other words, the kinds of tasks presented above are more easily related to the adopted definition of critical evaluation, understanding and analysis, as they are focused on knowledge, meaning making and abstract thinking, particularly when we challenged the youngster to think about hypothetical creative scenarios.

The case of media access and uses

Access and uses (understood as media practices) were collected through self-reported measures, such as “How often do you use the following media?”, and were not deemed suitable to be part of the evaluation. Therefore, the study made a distinction between practices and competences, considering that access to and uses of the media may be a prerequisite for media literacy, but the recognition of one’s practices is not, *per se*, an indication of competence. At best, the mere existence of practices would be a trace of implicit rudimentary skills, which the researchers would have to assume existed based on not totally reliable measures of self-reporting (Prior, 2009; Bulger, 2012). A different thing is the skills or the reasonings about ones’ practices – and even about what others do with the media or what is possible/available to whom, in a broader societal picture. These reflections would be assessed within the component of critical thinking, considering the affordances of the research tool.

This does not mean that the data collected on self-reported access and uses practices were not used. The Portuguese study started by presenting questions on sociodemographic data and on self-reported access and uses of different media. Besides the intrinsic value of these measures, their figures were crucial to better understand the main outcome of the research: the different levels of media literacy competence, calculated mostly by the assessment of knowledge and the resolution of tasks, in a written format. In other words, these data provided a context to analyse the calculated levels – a first clue to realize who the youngsters behind the results were.

An example of a different option can be found in the study developed by the Danish Technological Institute and the European Association for Viewers Interests (DTI & EAVI, 2011). While testing a previous framework (EAVI, 2009) using a survey completed in six European countries (N= 7303), this research tried to evaluate what was labelled as use skills: computer and internet-related ones, the existence of a balanced media use, and advanced internet uses. Due to technical problems, only the second was deemed evaluable. Hence, a balanced media use was assessed “based on the frequency of use” of different media in the previous three months (DTI & EAVI, 2011, p. 44). Scores were then given to each medium and its (perceived) recurrence. The people with a better performance on this criterion were the ones that used the media the most and more often. Besides the risk of “overinterpreting findings related to numbers

of users or frequency of use”, especially when considered apart from the other dimensions of media literacy (Bulger, 2012, p. 84), there is a pressing theoretical question. The underlying assumption of this measure, from the point of view of evaluation, is that *more is better*, which is a challenging idea, especially considering the history of media studies and media literacy research. That is, many of the foundational concerns of both were related to the expected dangers of excessive exposure or uses (Buckingham, 2003). And if several of these initial approaches underestimated the people’s skills and wills in relation to media and their messages, to fully reverse this premise could mean that, in the end, the practices of selectivity (even the critical ones) might be downplayed in favour of just consuming more (even if not much thought was devoted to it). In this regard, it is important to mention the pioneer study by Quin and McMahon (1993), which pointed towards lower scores on two media analysis tests amidst male youngsters who watched more hours of television – even when television contents were the subjects under evaluation. According to the authors (Quin & McMahon, 1993, p. 21), “simplistic equations such as ‘the more they watch, the less they know’”, echoing overly protectionist or pessimistic stances, “may be tempting, but could be misleading”. A more solid interpretation would be one we already pointed out: “it would however be legitimate to conclude that simply watching television does not lead to better media analysis skills. They have to be learned” (Quin & McMahon, 1993, p. 21). Besides, the authors also speculate about the absence of control, within the research, of “social variables” that might be related to the development of media analysis skills (Quin & McMahon, 1993, p. 21), which serves as a reminder of something mentioned before: the importance of considering the limitations of the research methods before reviewing outcomes of media literacy assessments that might neglect to consider the capital of the people under evaluation.

The difficulties presented by the last paragraphs derive from a specific conception of access and uses. However, this is not a univocal understanding. For instance, Ofcom (2008, p. 11) considers under the umbrella of “access” elements such as (1) “use, volume of use and breadth of use of the platforms”, (2) “competence in using the features available on each platform” and (3) “interest in, and awareness of, the various media platforms”. While the first pair of components is consonant with the Portuguese study conception and was deemed non-evaluable regarding the affordances of the research tool used, the third indicator presents a different case. Much like EAVI’s (2009) proposal, the Portuguese study considered it as part of the critical dimension of media literacy. That is, two questions of the test can be seen as being on the boundary between the dimensions of access and uses and critical understanding, although considered to be in the latter. One (Q1.h.) focused on factual knowledge (the ability to name an alternative search engine to Google, hence evaluating the awareness of different platforms, in accordance with Ofcom’s definition), the other (Q1.m.) on the capacities to use and mix different media when challenged to briefly describe how to organize a students’ union campaign. This one, in particular, crosses dimensions: on the one hand, the open-ended question valued

the awareness of different media available for the task; on the other hand, only the answers that contextualized the media to be used, showing some degree of critical awareness, could earn all points available in this exercise. The false stability of the media literacy concept and its dimensions becomes clear in this case, as researchers and institutions still add, mix or subtract elements according to their specific goals or theoretical foundations (Buckingham, 2003; Potter, 2010).

The case of production and participation competences

The declaration of production and participation practices was deemed important for the assessment of competences for two reasons: first, the belief that the simple existence of the activities presented to the youngsters (such as the collaboration with school media) would be something to value in itself, particularly if they had a minor weight on the levels; second, the shortage of established measures to assess production and participation practices, in comparison to the other dimensions of media literacy (Livingstone et al., 2008). An exception might be found in Lopes (2013), who stimulated the actual creation of contents. Despite recognizing the consonance of this challenge with the intent to evaluate media literacy competences, the Portuguese study did not embrace it at its fullest.

According to Lopes (2013, p. 174) the creative tasks would be “the most demanding of the overall media literacy test” (Lopes, 2013, p. 174), as the participants would go beyond the technical capacity to create and participate; they would also be assessed on the critical understanding competences mobilized while creating, emphasizing not only the importance of outcomes, but also the capacity to argue (and present the arguments) about what is being created. This was assessed by the Portuguese study, although grouping it under the critical dimension: the challenge to create was laid down, but the creation itself was not evaluated, as exemplified by the aforementioned case of a hypothetical campaign for the student union (Q1.m.); the focus was on the critical competences mobilized within an evaluate-and-reflect task about the different media available to create content. Once again, the affordances of the research tool were a strong reason behind this option: the eventual creation would necessarily be in a written format, one that might not say much about the youngsters’ actual and possible diverse creative competences, but that could make the researchers overanalyse, for better or worse, production and participation skills deemed important in their eyes, but not necessarily relevant for the sample.

What should young people know? Choosing the contents under evaluation

If media literacy can be understood as an outcome of the process of media education (Buckingham, 2003; Fastrez, 2010), then the absence of a formal and

widespread media education curriculum implemented within the school institution hinders a general and external definition of what should have been achieved by the subjects during its course. That was the case of Portugal⁴, as the current national Media Education Guidance (Pereira et al., 2014) was still under construction when the research tool was designed and implemented. This means that the sample under evaluation did not have a common ground, already in force or, at least, theoretically developed regarding media education. At the same time, the researchers did not have an established national framework to serve as a general guide either. An official media education programme does not totally guarantee, of course, the construction of a model instrument that would answer these questions and allow us to define exactly what should be evaluated, since there should still be room to recognise informally developed media literacy skills. Nevertheless, it would give important guidelines by establishing a common basis for the learning of media education that students should undertake during their compulsory schooling. Therefore, considering that “no one is born media literate” (Potter, 2010, p. 681), to choose what to evaluate (and the extent of the conclusions drawn from it) becomes a particularly sensitive topic. If the methods are structured around what researchers think young people should know, especially if it is probable that nobody fostered them, one cannot stop asking if we are indeed evaluating their actual media literacy competences or, instead, just the ones triggered by the research tools used and that are believed they should possess, regardless of other possible competences.

In the absence of a national curriculum or, at least, a sanctioned guidance, the subjects to be assessed were inspired by theoretical contributions⁵ – from the overall field of media literacy research, but also specific to media literacy competences, as stated earlier – and by the insights of the experts from the Portuguese Informal Group on Media Literacy⁶, which brought not only their knowledge to the discussion and creation of the research tool, but also their specific concerns. For instance, the presence of the School Libraries Network in the group influenced the inclusion of three questions on the boundary between media and information literacy – although this option also had a theoretical support in media literacy competences literature (Fastrez, 2010; Roosen, 2013).

⁴ In a broad mapping of national media education initiatives in the first decade of the 21st century, Pinto et al. (2011, p. 149) concluded that the Portuguese situation could be characterized as “fragmentary, without direction, [full] of advances and retreats and without a great horizon”, despite the existence of – atomized – diverse and interesting efforts.

⁵ The existence of different works – mostly academic-driven – that tried to set the diverse dimensions of media literacy competences is worth mentioning. The ones by EAVI (2009), Fastrez (2010), Ferrés and Piscitelli (2012) and Roosen (2013) were particularly useful to the Portuguese study. Besides, its pre-test within two schools was also important to get a first impression of the properness of the survey, adjusting it while taking into account the qualitative and quantitative inputs from its application.

⁶ GILM in the original acronym.

Towards levels of media literacy competences: creating a scale

As mentioned before, the final goal of the evaluation was to measure media literacy competence levels with reference to a 100-points-scale. Three main stages can be identified until reaching this intent (Figure 1): the development of the research tool, the gathering and coding of the data and the awarding of the 100-points at stake. The first has been thoroughly reviewed up to this point, hence, the last pair of goals will be at the centre of the discussion from now on.

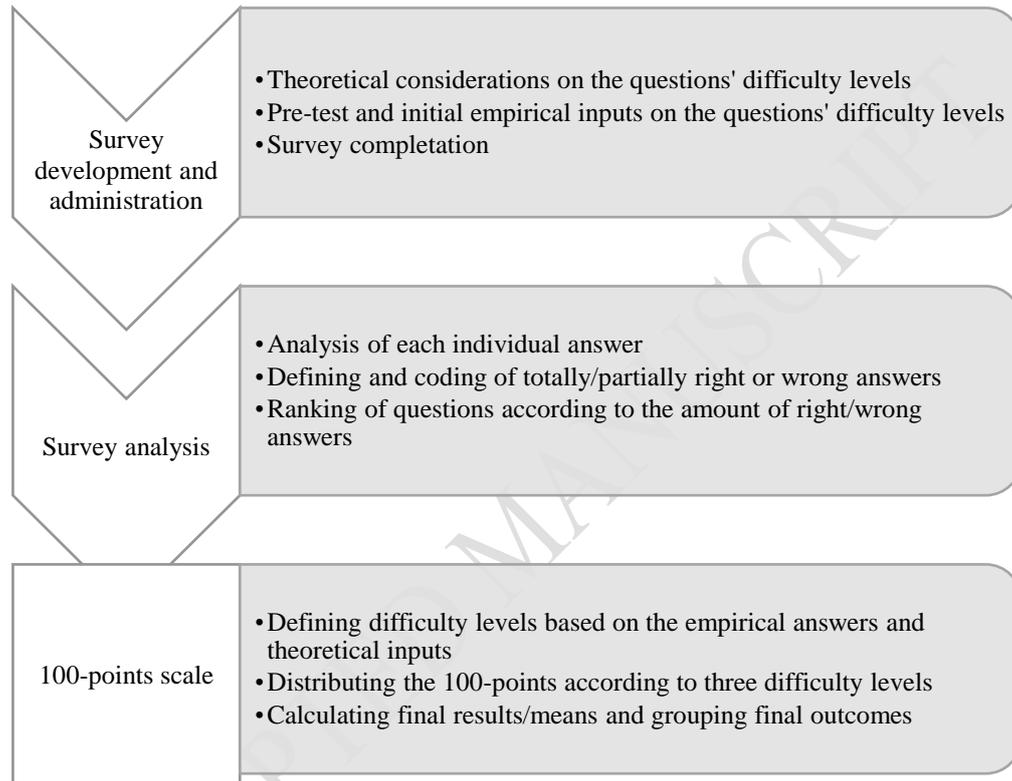


Figure 1: Steps towards defining media literacy competences levels.

After the completion of the survey, each of the 679 full questionnaires were reviewed and classified into two or three categories: totally right, partially right (if applicable) and wrong answer. While the questions regarding factual knowledge, practices and attitudes could be automatically coded, according to predefined categories, the open-ended tasks followed a different coding inspired by Benavente et al. (1996).

The assessment of the tasks started by reviewing every available contribution by the participants, which would help to set the standard, alongside theoretical inputs by the researcher, for what should be considered as a totally/partially right or wrong answer. To be placed within each of these categories, they would have to attain consensual coding by the authors of the study in order to increase the procedure's reliability. After defining what was a right (either totally or partially) or wrong answer, the questions could be ranked by the number of

wrong answers: a higher quantity of incorrect answers could indicate a possible difficulty level. However, the final difficulty level was established by comparing that ranking with theoretical considerations: for instance, by taking into account the relevance of the subjects under evaluation or even by pondering possible signs of respondents' fatigue in later tasks or other signs of misinterpretation of the questions, which would decrease the value of the task. This procedure led to another categorization: the overall difficulty levels were grouped into three categories comprising the attribution of 10, 6 and 3 points until reaching the 100 to be awarded. At the end, as aforementioned, the overall results were split into three: the ones above 50 points (level 3), the ones above the mean, but with less than 49.5 points (level 2) and the ones below the 29.01 average score (level 1).

Final remarks

The quantitative assessment of media literacy competences is hampered by the absence of a unified framework which would provide the external standards of evaluation (Buckingham, 2003). Media literacy goes beyond the prescriptive knowledge about media, it recognizes the importance of the diversity of senses that can be developed in relation to contents without fixed and univocal meanings. Its research focus is on people's interpretations and reflexivity. Therefore, the critical dimension had a key place in the Portuguese study, influencing how the other elements were considered. This also means that its scope had to be expanded: the critical evaluation, understanding and analysis was not only tied to the media and its contents, but also to participants' own media practices.

Consequently, the concept of media literacy adopted within the Portuguese study relegates access and uses *per se* to a secondary position: to be able to access and use was not more valued than to be able to reflect upon their media practices, or even to critically argue about the reasons for the absence of a given practice. That is, doing more with the media cannot be a sign of higher levels of media literacy competences – if we follow a definition of media literacy that stresses its legacy in relation to the central position of critical thinking, of course. To go beyond the wonders of always-on media practices in so-called information societies, which foster utopian expectations towards “digital natives” and a renewed public sphere, some enthusiasm must be curbed. For instance, we can assume that answers such as “I don't know” or “I prefer not to do it” can be a stronger sign of media literacy competence than being always on. Reaffirming this importance of selectivity means that we have to find ways of assessing competences beyond the bundling of different accomplished tasks. Considering the broader picture of media users research, this kind of approach is preferably studied using qualitative methods (Jensen, 2012; Livingstone et al., 2008). However, there is a push – including by policymakers (e.g., Recommendation 2009/625/EC; Directive 2018/1808/EU) – for more evaluative and quantitative works, to set standards for future interventions and

to more systematically map the broader picture of media literacy and how it translates into measurable competences.

In fact, the assessment of media literacy competences can be regarded as advantageous for gaining public importance, improving practices and informing national and transnational policies. In the context of the European Union, this is, moreover, an obligation for all Member States. According to the European Audiovisual Media Services Directive (Directive 2018/1808/EU, article 33a), "Member States shall promote and take measures for the development of media literacy skills" and shall report to the Commission (in 2022 and every three years thereafter) the implementation of this obligation. This is an additional reason for European countries to define reliable and valid instruments that are capable of assessing media literacy as a complex and dynamic process.

Based on the theoretical and methodological discussion carried out so far, we are in a position to present some recommendations for assessing media literacy competences, taking into account the merits and the limitations of a quantitative approach and assuming that "each approach to measuring media literacy competencies embodies core values in relation to a particular set of goals, contexts and situations" (Hobbs, 2017, p. 1). To complement this discussion, we include in Annex 1 a table that systematizes a set of theoretical approaches and empirical studies that addresses media literacy competences, showing the diversity of approaches and methods used from different authors and geographies.

As argued, quantitative methods can provide important and relevant indications of overall trends in media literacy competences and can give an extensive picture of the population's media literacy levels. But they should not be regarded as the unique way towards competences: despite the impression of accuracy that figures and statistics might give, their limits might undermine the relevance of any research that seeks through them what they cannot give, sacrificing the complexity of the concepts (and, of course, the people) in question for the sake of measurement. Methodological complementarity might be helpful: other approaches and methods (namely qualitative) need to be considered to complement the quantitative results, bringing to light competences that are difficult to assess through declarative surveys, scales, checklist items or even task-based assessment. As media literacy is a process of communicative interaction, methods based on observation, performance *in situ* or task-based interviews could provide more detailed information about media literacy competences. If, as stated by Hobbs (2017, p. 14), "the measurement of media literacy competencies is a fast-moving target", the diversity of approaches might be crucial to make sense of an elusive research subject.

Complementary methodologies can also be a way of overcoming the separation of cognitive and affective processes and the neglect of the "fundamental significance of students' emotional involvement in the media" (Martens, 2010, p. 2). As also pointed out by Martens (2010, p. 15), "both cognitive and affective mechanisms are theorized to determine the cognitive,

attitudinal and behavioural outcomes of media literacy practices". Studies on media literacy competences assessment have been somewhat unsuccessful in considering socio-emotional competences and this undoubtedly "raises many additional methodological challenges" (Martens, 2010, p. 15). Hobbs (2017), considering the importance of examining affective dimensions of media literacy and aiming to connect the cognitive and affective domains, outlined two approaches for measuring the digital and media literacy competences of children and teens – one based on self-report measures and another on performance-based measures. Also, Porat et al. (2018, p. 26) in their study aiming to explore "the perceived digital literacies of junior high-school students, their actual competencies revealed in performance tasks and the association between the two", included tasks to evaluate socio-emotional literacy. However, Hobbs (2017, p. 13) recognises that "researchers are just beginning to explore how media literacy may support development in the affective domain, particularly the development of empathy and socioemotional development. Future research is needed to conceptualize and measure the intersectionality of these important concepts".

In some studies that supposedly aim to assess media literacy competences, questions that assess self-reported media practices are sometimes taken as questions that are assessing media competences. This is a very common misunderstanding that needs researchers' attention: one thing is to appeal to the respondents' memories and perceptions regarding their habits with questions such as: "When you are on the internet, how often do you do this kind of activities?". Another is, such as the example presented by Q1.o, to simulate a somewhat familiar practice that may open the possibility of exploring competences raised by the survey, but with some degree of similarity to everyday practices. Likewise, it is necessary to distinguish media practices and media competences. Therefore, the use of familiar resources, such as declarative surveys, behaviour and attitudinal scales and checklist items, may show many limitations in assessing competences; in this case, the use of performance-based activities and task-based exercises can be more useful to evaluate competences of a layered process such as media experience. Data analysis using these techniques requires a very accurate definition of the coding protocol, the assessment of its execution reliability and the choice of indicators suited for measurement (especially if it is intended to achieve statistical representation and significance). The use of qualitative pre-testing – for instance, discussing the measures in focus groups (Primack et al., 2006) – might be particularly important.

Of extreme relevance is the definition of valid and reliable indicators, designed according to the population whose competences will be assessed. Not all indicators are equally relevant across populations and age groups.⁷ This

⁷ For example, the questions (Q1.e, g, i, p) regarding Public Service Media (PSM) were much discussed among the researchers to understand whether they would make sense within this particular study. It was discussed whether students aged 17 and 18 should have knowledge of what PSM is. The decision was to include them as these young people would be old enough to

poses challenges in assessing media literacy competences at a national but also at an international level, where the possibility of creating a single instrument for all member states is raised. UNESCO (Moeller et al., 2011), although recognizing that an independent survey would have the advantage of being tailored to the area of interest, also acknowledges that it would be costly to create and administer (in this case by UNESCO) and, in this sense, proposes alternative strategies that may be interesting for those who intend to carry out work in this area: use the experiences of MIL surveys already developed; join forces with other international surveys – such as PISA – or national education assessments; combine index of secondary international statistics and international surveys; and a more simplistic solution that entails creating an index from international statistics. This suggestion might be tempting, as it presents practical advantages. But it also pushes towards standardization and, eventually, the abridgement of competences to little more than something established beyond the specificities of people and their practices.

Another aspect that deserves reflection concerns the importance of extending this work to other age groups besides children and young people. There are already some studies that have explored other age and professional groups that can serve as inspiration (see Carvalho, 2015; Hallaq, 2016; Perez Tornero et al., 2017; Simons et al., 2017). As advocated by UNESCO (Moeller et al., 2011, p. 20), "indicators should track the acquisition of MIL in the formal education system as well as in informal learning environments". Only in this way will it be possible to capture the diversity and richness of media experiences, converging formal and informal learning (Pereira et al., 2019). This involves the creation of a multidimensional instrument that uses different stimuli, that includes not only texts, but also audio-visual resources (images, videos, podcasts, examples of media products and contents) – although developing concise research instruments might be a challenge, considering that tiredness in filling out any tool can lead to bias in the results. This diversity can help to make the research more creative and appealing to respondents, echoing their own practices. Regarding this issue, in the case of children and young people, the instrument must mobilize competences of the everyday life of these audiences, assuring that an adult-centred view does not prevail in its design (in the European Research project Transmedia Literacy, adolescents showed, for example, that they produce audio-visual contents in a very different way from that stipulated by adults, which does not mean that it should be less valued – see Pereira & Moura, 2018).

Although it is undoubtedly important to assess media literacy competences to empower active citizenship and to know more precisely the impact of initiatives in this field and their benefits, it is equally important not to

follow the regular national mentions and disputes about PSM. However, this indicator would not have been used with lower age groups. As we mentioned earlier in this article, it is important to define beforehand which indicators to use and these should be in line with the levels of knowledge about the media that the subjects should have, according to their age and developmental stages.

devalue the process in favour of the result. If the main concern is placed on media literacy assessment and on the measurement of its results, as occurs in the learning process of many schools, there is a risk that for students the competences assessment framework will resemble a traditional school assignment, making media literacy lose its citizenship value.

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Annex 1

Selection of theoretical approaches and empirical studies on media literacy assessment

Theoretical approaches					
Authors	Dimensions considered			Proposal	Country
	<i>Access & uses</i>	<i>Critical understanding and evaluation</i>	<i>Production & participation</i>		
Ferrés (2007)	No	Yes	Yes	Base document defining dimensions and indicators to assess competence in audiovisual communication. Proposal based on the contributions of 46 ML Iberoamerican experts and 14 ML Spanish experts	Spain/ Argentina
EAVI (coord.) (2009)	Yes	Yes	Yes	Pilot studies – four case studies. Assessment tool using selected indicators applied across the EU27 (ML experts).	EU
Fastrez (2010)	No	Yes	No	Proposal for a Media Literacy matrix constructed from four areas of activity (reading, writing, navigating and organizing) and three dimensions of media objects (informational, technical and social), the intersection of which defines twelve categories of competences.	Belgium
Moeller et al. (2011)	Yes	Yes	Yes	Development of an inclusive list of potential indicators for measurement and statistical representations of MIL based on two tiers: - Tier 1: 1 variables/indicators to gauge availability of institutions that nurture and promote MIL in society, policy-makers, education and work; - Tier 2: variables/indicators for MIL among teacher-trainers, teachers in training/service, and	Global

				students (primary and secondary) within the educational system.	
Ferrés & Piscitelli (2012)	No	Yes	Yes	Proposal of dimensions and indicators to define the new media competence. Proposal based on contributions by 50 renowned Spanish and foreign experts in ML	Spain
Roosen (2013)	No	Yes	Yes	Proposal of a ML competence framework based on four categories (reading; writing; navigating; organising) operated in three dimensions of media objects (information, technical and social).	Belgium
Hallaq (2016)	Yes	Yes	Yes	Digital Online Media Literacy Assessment (DOMLA) - development of a valid and reliable quantitative survey to measure digital online media literacy of university-level students. DOMLA is intended for university-level students. It was validated and tested by a 12-step process involving subject-matter experts and undergraduate level students.	USA
Hobbs (2017)	n.a.	n.a.	n.a.	Brief review of approaches to measuring digital and media literacy competencies – the author outlines two approaches: performance or competency-based measures and self-report of attitudes, knowledge, skills and behaviours.	USA

Empirical studies				
Authors	Dimensions evaluated	Methods	Population & sample	Country

	<i>Access & uses</i>	<i>Critical understanding and evaluation</i>	<i>Production & participation</i>			
Hobbs & Frost (2003)	No	Yes	No	Quasi-experimental research: <ul style="list-style-type: none"> - Paper-and-pencil response to open-ended questions and checklist items - Open-ended response text; - Scoring following a coding protocol. 	Students enrolled in grade 11 Treatment group N= 293 Control group= 89	USA
João & Menezes (2008)	No	Yes	No	Survey: <ul style="list-style-type: none"> - Scale on media knowledge; - Exercise: interpretation of two types of media messages (news and cartoons) 	University students N= 241	Portugal
Arke & Primack (2009)	Yes	Yes	No	Development and testing of a pilot measure of ML – a scale consisted of seven measures corresponding to five domains (recall, purpose, viewpoint, technique and evaluation).	College communications students N= 34	USA

DTI & EAVI (2011)	Yes	Yes	Yes	Survey: online and offline (phone interviews) Core questions on ML were scored and three levels were calculated: the basic level, the medium level and the advanced level.	Online: population from seven European countries aged 16-74. N= 7 051 Offline: population from four European countries aged 16-74. N= 252	EU countries
Lopes (2013)	Yes	Yes	Yes	Survey Competences test	Students over 18 yo, N= 520	Portugal
Pereira et al. (2015)	No (just considered for context)	Yes	Yes	Competence test	Students at the end of compulsory education (17-18 y.o.), N= 679	Portugal
Carvalho (2015)	No (just considered for context)	Yes	Yes	Survey Focus groups	Adults in labour market N= 201	Portugal
Schilder et al. (2016)	n.a.	n.a.	n.a.	Mixed methods combining qualitative and quantitative approaches: interviews and quantitative survey	ML experts and scholars: interviews N= 10; survey N= 133	USA
Simons et al. (2017)	Yes	Yes	Yes	Questionnaire (web survey)	Teachers N=454; student teachers N= 219.	Belgium
Pérez Tornero et al. (2018)	Yes	Yes	Yes	Proposal of a framework of indicators and a media competence self-assessment test for public administrations.	Public administration professionals N= 58	Spain

Porat et al. (2018)	No	Yes	No	Performance on digital literacy tasks - battery of six digital literacy tasks Questionnaire: self-perceived evaluations of digital literacy competencies (to evaluate their perceived competencies on those tasks)	Junior-high-school (Students approximately 13 years old). N= 280	Israel
Schilder & Redmond (2019)	No	Yes	No	Inquiry-based learning and questioning - pretest-posttest experimental design	Undergraduate students enrolled in media literacy courses N= 72	USA

ACCEPTED MANUSCRIPT