Media Literacy Worldwide

Similarities and Differences of Theoretical and Practical Approaches.

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Abstract — **It is well accepted that ICT and media competencies are indispensable in the modern world, and that education at school and on the level of tertiary education should target to convey corresponding skills. However, there is much less agreement on specific skills that should be included, and there exist quite a few different proposals and approaches under terms such as media literacy, information literacy, and further more. In this paper, we provide an overview on these different concepts, highlight differences and similarities of these, and also discuss the terminology being applied in this context on an international level.**

Keywords-Media literacy, media competence, media literacy education, digital literacy, ICT literacy

I. INTRODUCTION

Europe has accepted the guiding vision of an information society [1] and is actively fostering development in this direction, and other states are following similar strategies. One central element of all these approaches is the enabling of citizens to act based on adequate skills and competencies, taught in primary, secondary or tertiary education, as well as in terms of different life-long learning scenarios.

In context of skill- and competency-based education, the investigation on and discussion of skills and competencies actually plays a major role in the scientific research and discourse, because they are supposed to lead to a global understanding of these terms. One focus category of this discussion is *media competence*, playing a significant role because of its future relevance to humanity [2].

While there mostly seems to be agreement on the necessity of a solid media education worldwide, approaches as well as theory and practice differ significantly. For instance, while lots of media educators worldwide spread their opinion on media education and relating aspects, policy-makers mostly do not implicate these aspects in education [3]. Even more, there are quite substantial differences in the underlying models and terminology in the field. For instance, discussion focuses on *media literacy* and *media literacy education* in the USA [4], while *digital literacy* represents the central term in discussions in Canada [5]. In Spain, terminology in this field is characterized by *information literacy* and *ICT literacy* [6], while *ICT literacy* as well as *ICT education* play the central in Portugal [7]. In Germany, the current discussion is dominated by *media competency* [8] with a tendency to imply literacy-related terms [9].

A resulting problem of the spongy and internationally not standardized discussion in the domain of media education is that the specific contents of curricula, as well as the status of media education differ widely when looking on theoretical and practical approaches in different regions [10]. This leads to concrete problems, such as that media skills of most teachers are not adequate at all [2]. Also, while students belonging to the so-called *Generation Google* [11] often know how to surf the World Wide Web and how to use social networks, they often are missing necessary knowledge on internet security and effectively on searching and rating information [12].

II. GROUNDING OF MEDIA LITERACY EDUCATION

While the discussion on approaches and models related to media literacy is partially vivid, there seems to be not much of influence to the field of education and educational policy [13]. Therefore, it is essential for the educational sector to provide a basis for the development of media-related curricula and approaches, which is also very important in context of engineering education on two levels: On one hand, tertiary education is based on the knowledge, skills and competencies available to students from their primary and secondary education. On the other hand, approaches from the area of media literacy and competence might be a useful addition when developing standards, such as computing standards in higher education [14].

In terms of the development of an information society, internationally comparable standards are a necessary step. Such standards already get applied in different areas of IT [15] or in the field of engineering in general [16].

A. Actual Status of Media Education – An Outline

The development of standards in the educational sector is a quite common procedure that, for instance, already gets applied in different areas, such as school curricula, but has to be boosted in context of higher education. One example in terms of mathematical education in schools are the NCTM standards [17], another example from the area of geographical education are the Educational Standards in geography for Intermediate School Certificates [18]. Similar approaches are also being used on the level of higher education [19] but – and that's the point to argue about – there are no similar approaches in terms of media education.

Examples for concepts in terms of media education do exist. Such examples include summer schools on media-related topics for high school students in Mexico City, some projects relating to the use of Massive Multiplayer Online Roleplaying Game (MMORPG) in American colleges [20], and there are efforts on the usability of Educational Games in terms of formal education, for instance in Germany [21]. Fig. 1 shows an example for these projects.

Figure 1.   Example for media education – Game-based Learning in school

However, these and similar approaches are focusing on specific skills and competencies, only, and are not offering a complete approach to a media literate subject. The role point about this issue is that similar offerings can be made out in nearly every country, what seems to clarify the necessity for a curriculum-based and standardized media literacy education.

Some positive examples already exist, for instance in Great Britain [22] or to Nigeria [12], but there is the same problem in most countries that got analyzed with a view to implication of media literacy education in formal education: Comparable approaches on international level are mostly missing. Furthermore, the respective approaches focus significantly differing contents, mostly caused by projects initiated by single persons or groups.

The reason for this situation is that "*in most countries policy-makers shaping national education programs have just recently become aware of the need for media literacy*" [3].

B. Media Education and the Meaning in Terms of Engineering Education

One of the consequences of the missing media education in formal education is the fatal lack of media-related knowledge, skills, and competencies that pupils get taught in terms of their school education. Students, entering some engineering program of study, might be confronted with severe problems, not having the opportunity to strengthen their possibly limited media competencies from school. Clearly, such problems will occur for students, which are not in the lucky situation to have the opportunity to be in one of the programs mentioned above. Unfortunately, such programs still are very rare.

IT-related degree courses have problems to get their students to a comparable level of competencies before, and also during their studies, amongst others because of the missing

implication of broader media competency approaches in curricula [14].

Since applying changes to an existing curriculum is typically a very time-consuming process, intermediate-term solutions are required to overcome the described issues. This is, where the media literacy and media competence discourse comes in, and why this discourse is worth an intense look – even and especially in terms of engineering education.

In the following, we provide an overview on media education in different countries and we discuss the underlying concepts. Here, we focus on concepts from Europe and the US, because they get used as well in lots newly industrialized countries and emerging markets [22], but we also briefly mention some approaches from other regions and countries, which differ from these.

III. INTERNATIONAL OVERVIEW ON MEDIA LITERACY-RELATED TERMINOLOGY AND CONCEPTS

Due to the above-mentioned mostly uncoordinated and sometimes quite pragmatic approaches on media education, terminology in these contexts is not consistent and differs from country to country [23].

As mentioned above, common expressions are *media literacy* and *media literacy education* that mostly get employed in the United States [24]. Canada for example focuses on *digital literacy* [25] on the basis of *media literacy*, and in Germany, discussion is dominated by *media competencies* [8] – with a tendency to implicate *media literacy* [9]. These differences in terminology are also related to a different understanding and different concepts. For instance, *media literacy*, relating to traditional media as well as digital media, includes a far more substantial approach than *digital literacy*, which is limited to digital media.

As consequence, lots of countries are faced with quite similar problems with respect to media education – recognizing and realizing it or not – and, therefore, should have the same interest in developing a uniform understanding and terminology in this field as well as corresponding concepts. This being said, country- and region-specific approaches and the relating terminology will be analyzed and discussed in the following as a first step in terms of developing one common understanding of used terms.

A. Media Literacy in European Countries

In spite of the geographical proximity, approaches and discussions related to media competence vary even in Europe.

1) Media Literacy in Great Britain: In Great Britain, the discussion is focused on the concept of *media literacy*, and media education plays an important role at least since the 1930s. While, in the domain of media pedagogics, media literacy is often understood equal to media education, media literacy lately gets more and more into the focus of political campaigns and discussions, relating to the necessary competencies in context of media usage, and, therefore, is seen as goal for media education [22].

Great Britain plays a very significant role in terms of the actual media literacy debate, because a handful of countries worldwide, such as Australia, and New Zealand use the same understandings and similar approaches [26]. One stand-alone attribute of Great Britain is that it actually has an own media related subject in schools and is partially seen as leader in terms of education and media literacy, which is the result of the implication of different institutions that have been involved in media education [26]. Cooperating institutes are, for example, the British Film Institute, the English and Media Centre and the Institute of Education. Furthermore, Great Britain has a very positive background related to media pedagogics and, therefore, even today focuses school-related media literacy and education [22].

2) Digital and ICT Literacy in Scandinavian Countries: Compared to Great Britain, media-related developments in were introduced quite late. Nevertheless, compared to most other countries, media education was introduced quite early into the curricula of primary as well as secondary schools. For instance, Finland and Denmark introduced media education in the early 1970s in school curricula – relating to traditional media at the beginning – Sweden, Norway, and Iceland introduced it a few years later in the early 1980s [26].

On the basis of these discussions on traditional media literacy and media education, most Scandinavian countries today focus actual developments relating to ICT. Therefore, terms such as *digital or ICT literacy*, which are accenting the so-called *new or digital media*, got normally applied over the last years.

This suggests an amendment of *media literacy* with *digital literacy and ICT literacy*, which will be discussed later on, but it can be kept in mind at this point that there obviously have to be some similarities of these concepts, because all terms result from the same discussion and, therefore, have a similar background.

3) Media Competence in Germany: In Germany, not *media literacy* but *media competence* is the concept in the center of most discussions. It mostly refers to communicative competence, which was introduced in the German social science by Habermas in 1971 [27]. In 1973, it was picked up by Baacke, introducing an understanding as the human capacity for understanding symbols of linguistic and non-linguistic nature [8].

In the 1960s a change of perspective in the media discussion occurred. While the focus was on a conservative educational base position before, the focus moved on to media-related needs of people that use media in all-day life and to media acquaintance [28].

The concept of *media competence* emerged in 1976 and not only emerged in the scientific discourse, but also move more and more into the focus of the public discussion [29]. *Media competence* as a concept is associated here with an increasingly complex world. Often, it is also used in the sense of just required parts in terms of complexity reduction without further differentiation. With the increasing social ubiquity of the compound accompanied by the problem of imprecise

definition, Gapski for instance used the plural *media competencies*, by emphasizing the diversity and variety of social practices of media differs from individual to individual and from context to context [30].

In the discussions on *media competencies*, three different aspects are usually distinguished. *Media knowledge* as one element of *media competencies* is understood as the specific factual knowledge on media-related issues, necessary for developing certain higher media-related skills. Media rating is understood as the ability to critically analyze media-related concepts and offers, which media processing refers to necessary skills for adopting and utilizing media systems, as well as designing and implementing media documents. Table 1 provides and overview on these different elements of media competence [31].

TABLE I. ELEMENTS OF MEDIA COMPETENCIES AS SEEN IN GERMAN DISCUSSIONS

Media Competencies		
Media knowledge	*Media rating*	*Media processing*
Knowledge on functions, structures, and for orientation	Critical reflection as well as ethical and cognitive based qualifications	Media adoption, media use, media participation, and media creating

Media competence is not the only concept that is being discussed in Germany lately. *Media literacy*, respectively the German translated term, has been implicated in the discussion for quite a few years, after it has been neglected since the 1980s in context of the skill- and competence-based discussions [32]. As the discussion around this term currently stands at the beginning, the discussion on *media literacy* and the relationship of *media literacy* and *media competencies* has just been described in a few publications in recent years, while the concept of *media competency* respectively *media competencies* led to a fully debated theoretical construct.

One additional aspect has to be shortly mentioned at this point: The translation of the Anglo-Saxon term *literacy* into German actually is not that simple, because the German word *Bildung* might be translated by literacy as well as by education.

In context of taking the German understanding as a basis for the different in this context applied terms, an integrative understanding of terminology results (cf. Fig. 2). Fig. 2 also implicates not only the different literacy-based terms, but also competence-based terms that are well established in European countries, such as Germany, Italy, the UK or Scandinavia.

Even if these competence-based terms are partially unknown especially in some Anglo-Saxon regions, such as the US, mentioning them at this point seems to be a necessity because of nowadays' intense discussions in the European discourse. Although we cannot provide a fulfilling chapter on this actual German discussion in this article, it might be very promising for the discussions on European as well as international level.
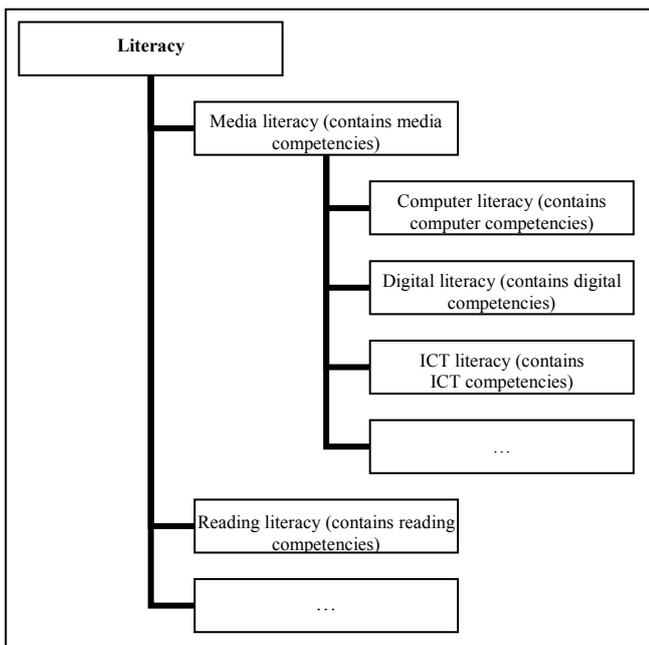
Figure 2. A Possible visualization of the different terms discussed in this paper

The German approach, mostly the discourse around *media competencies*, is quite popular in the European area. Other countries, such as Austria, Switzerland, and Italy took up the German discourse, utilizing it as a basis for own discussions in this field [22].

4) ICT and Information Literacy in Iberian Peninsula: While England and Germany were at the forefront of research and technology investments after the post-war, Portugal and Spain started a trend in these areas not earlier than in the mid 1980s with the return of democratic governments. The evolution of *ICT literacy* and the relating infrastructure was almost similar in Portugal and in Spain. Statistics for both countries show that the two economies began a wide and strong modernization movement beginning in 1960s, also starting to expand their educational systems. As a result, illiteracy was eliminated in both countries in 20 years [33]. At the same time ICT was introduced in the educational system in these two countries [34].

The ICT development in Portugal began because of growing importance of the young domain of research called Educational Technology in the middle of the 1970s. Thus, because of the huge importance of ICT in terms of education, ICT became a topic of interest in terms of academic matters. Afterwards, the term ICT started to appear on the Portuguese research around the eighties, when there was an increase in the production of scientific research and papers published, mostly about institutional ICT research projects [7].

Although ICT in education has been a topic of growing academic interest and discussion as well as political debates in Spain since 1985, the term *ICT literacy* started to appear very late around the 1990s in the discussions [6]. Here, *ICT literacy* was mostly understood as a concept that describes all the governmental programs and initiatives to build the Spanish

information society. Approximately since the year 2000, mostly information literacy gets applied that concerns about many different efforts between academics, professional, and political agendas priorities, about how people and institutions could work together to develop themselves, and others as learning facilitators, and how they could deliver to Spanish citizens the best environment to provide them the most productive Information literacy experience.

Nowadays, both countries are very committed to participate in EU initiatives and projects related to information literacy [35] and share the same understanding about the role of ICT skills in terms of future economy issues. Therefore, one can say that the media educational domain in Portugal and Spain cannot offer that much background as in the German or British discussion, what is the reason for the strong focusing of new media and the corresponding literacies, ICT and information literacy, which seem quite similar to Scandinavian approaches.

Moreover, approaches from the area of Iberian Peninsula are mostly related to the level of skills, which means, these countries mostly seem to use similar terms as in Scandinavian countries, and is just adding the term *information literacy* to the discourse discussed in terms of this paper.

As it was shown above, approaches and the respective terminology inside European countries differ. Countries, such as Germany or Great Britain, have a longer tradition discussing media-related competencies and literacy, and countries that do not have this decades-lasting history on media-related topics. The last named countries, such as Spain or Portugal, often seem to use a more pragmatic approach focusing the digital domain with a view to economic reasons resulting from the training of skills.

But, looking on projects and discourses beyond Europe at this point, are there some more differences in terminology?

B. Media Literacy in North America

As basic information, one can say that the understanding of *media literacy* in the United States and Canada are quite similar, but Canada's media educational history is more extensive, so both countries actually do have a history on discussing *media literacy*.

1) Media literacy in the US: In the United States, a quite intensive discourse around the term media literacy takes place since the early 1980s. Before that, in the middle of the 20th century, educators were of the opinion that media culture and mass media had to be "hated, feared, and rejected" [2].

Afterwards, media got more and more implicated in educational contexts by a whole new generation of educators. In this context, *media literacy* became a topic of interest. Obviously, these developments correspond to changes in European Countries from a conservative media-critical thinking to implication of media, for instance in educational scenarios. According to [36], approaches according to media literacy in the US can be divided into five focus points (cf. table II).

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TABLE II. DIMENSIONS OF MEDIA LITERACY IN THE US BASED ON GRAFE

Media Literacy as…	… Empowerment
	… Critical Media Literacy
	… New Media Literacies
	… Visual Literacy
	… Protection and Health Literacy

One special topic that evolved the focus point 'media literacy as empowerment' is the concept of *media literacy education*, which can be understood as "the educational field dedicated to teaching the skills associated with media literacy" [37]. Compared to other approaches, i.e. media education being applied in the United Kingdom, this highlights the understanding that literacy in general plays a significant role for representatives of the media-related fields [36].

Even though a quite intense discussion on media literacy and media literacy education exists in the US, one can say that the media literacy discourse and especially the implication of it in terms of formal education "is not as advanced in the US as in several other English-speaking areas such as Great Britain, Canada, and Australia [23], and that media education respectively *media literacy education* widely differs within the states of the country [23]. One reason for this statement is the abrupt end of the funding of media educational fields, because of the so-called *back-to-basics movement*, which caused the media-related practical and theoretical research in the US a lack of nearly 10 years. This approach caused the American media educational field to realign itself to the discourse in Canada or Great Britain [22].

Discussions in the US actually are mostly related to *media literacy*, but looking to actual developments, the term *media literacy education* has to be implemented in the in context of this article analyzed terminology.

2) Digital Literacy in Canada: Canada has quite a big historical background on discussing media literacy. Thus, Canada was the first country in North America providing *media literacy* in school curricula, and partially has integrated media education from grade 1 until the final year of secondary school. Besides the practical level, there was a scientific debate on this topic. For instance, Masterman published an immense work named *Teaching the Media* [38], in which he developed a theoretical framework for media education and differentiated different dimensions of media.

Actual developments take this understanding as a basis and focus on concepts of digital literacy in terms of a so-called digital literacy strategy that is supposed to "generate significant economic and social benefits for all Canadians" [25]. This approach seems to be quite similar to the approaches of the Spain and Portugal, with the big difference of an historic background on discussing *media literacy*. Thus, the dimensions of digital literacy can be understood as mostly according to the dimensions of *media literacy* – just focusing digital media [25].

In the previous paragraphs we mainly investigated the most common approaches on *media literacy*. The presented list of approaches, however, cannot be considered to be complete. Reasons for this mostly refer to language problems, because non-English speaking countries, such as developing countries or newly industrialized countries, do not regularly take part in the international discourse.

This, on the one hand, leads to an immensely high presence of the approaches from industrialized countries [22], and, on the other hand, as well to a lack of integration of approaches constructed in other languages. To overcome this issue in terms of this article, we provide some information on approaches from other global regions at this point.

C. Media Literacy in other global regions: Some other regions, such as Asian countries, simply do not have such a comparable and decades-lasting discussion on *media literacy* respectively *media competencies* and, therefore, seem to have overtaken the Anglo-Saxon terminology. The influence of the British medial literacy discussion for other English-speaking global regions is also to be confirmed when looking to Australia or to New Zealand [26]. Mostly, the reason for this is that media education just started to gain acceptance in specific regions, such as Asia, in the late 1990s [39].

African as well as the Middle Eastern countries seem to have a real lack of media education for now, mostly because of society-relating problems [40]. Discussions from Latin America seem to be driven pragmatically and mostly following Anglo-Saxon approaches [41].

In terms of this article, the given information on country-specific approaches shall be sufficient. Of course, there exist other approaches and additional terms that get applied in this context, but their implication in terms of this article would go beyond the scope of this article.

D. Media Literacy International – An Outline

At this point, it can be assumed that the presented approaches based on *media literacy*, *ICT literacy*, and *information literacy* provide a number of similarities, but differ in details. Thus, the traditional term media literacy mostly gets applied in countries with a huge background in media-related discussions, such as the US, the UK, Canada and the countries in Northern Europe. In some countries that do not have a long-lasting background on media-related discussions, such as in Iberian Peninsula or some Asian regions, the discussions focuses especially terms relating to new or digital media and approaches are mostly seen skill-based in terms of an economic discussion.

Nevertheless, the terms *ICT literacy* and *information literacy* can be understood as focus categories of *media literacy* [42], remembering "that the term media refers to a holistic approach to media, from classic (1st generation) to New Media (4th generation) [43].

While the term media literacy is often used in the Anglo-Saxon areas and those countries referring to their discourse (Australia, North America). In Germany as well as "*in the francophone countries the term media competence is used and*

the term digital competence is used in the Scandinavian countries describing everything that has to do with digital media" [44].

Therefore, mostly four main issues can possibly be differentiated in terms of this article:

- Literacy-based concepts;
- Competency-based concepts;
- Approaches focusing digital media;
- Approaches focusing traditional media.

It should be mentioned that these concepts are often described by applying the same thematic categories [45]. As such, they might all be perceived as general human ability, as educative idea, as a general educational goal and as an assessable indicator in empirical research [46].

Therefore, the general term media literacy may be defined as "*the ability to access, analyze and evaluate the power of images, sounds and messages [...]; as well as to communicate competently using media available, on a personal basis. Media literacy relates to all media, including television and film, radio, and recorded music, print media, the Internet and other new digital communication technologies*" [47]. Furthermore, media literacy can be understood as an educational goal [46] and can be divided in different categories of media, such as computer, digital, or ICT literacy.

In the European discussion, both concepts of *media literacy* and *media competence* currently dominate the discussion, especially in the German as well as in the British scientific community [22]. Here, both terms get analyzed in terms of finding differences as well as similarities that could lead to an integrative understanding, which might be very interesting for further discussions.

IV. MEDIA LITERACY EDUCATION AND ENGINEERING

In light of the deficiencies in trainings related to media competencies and the different approaches to overcome this issue, it is possible to take a look on the area of engineering education, and, thus, how this domain handles challenges in terms of media education.

Focusing the domain of higher education, one can constitute that there is a wide variety of approaches and curricula. Thus, it seems reasonable to look on recommendations and standards with a view to curricula, for instance of the sector computer systems engineering.

Analyzing different international recommendations, such as the *Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems*, published by the Association for Computing Machinery (ACM), one can say that information from the media educational discourse is not regarded, respectively discussed, at all. E.g., the dimensions of the goal capabilities and knowledge [14] are very basic compared with the media educational discourse.

Besides that, there are lots of other examples, disregarding the media literacy discourse. E.g., when looking at the

Standards for Computer Science in School [48], published by the German Society of Computer Science, or, when analyzing the Information Literacy Competency Standards for Higher Education, published by the American Library Association [49]. In none of these references, media literacy or some of media literacy-related categories, such as media use, media critical thinking or media design is mentioned.

Therefore, it has to be claimed that the curricula that got mentioned above, but also other curricula, understand the respective competencies as common basis of their curricula that possibly get taught in terms of school education, or that they are supposed to self-develop. This has to be questioned, at least concerning the aspects media critics, but also in terms of visual literacy.

Some research on competence-related deficits might indicate that, in fact, also deficits in media competences are obvious for engineering graduates. While the category media competence itself is not being considered directly, aspects such as deficits in communication and computing skills could also be interpreted as missing skills and knowledge in terms of media competencies. Just few papers exist on this area of research, but some indeed highlight problems related to general computer skills and knowledge [50].

V. CONCLUSION & FUTURE WORK

In this article, it was shown that approaches and the related terminology in the field of media education are not unitary at all, and, actually, differ widely in dependence on the respective country as well as the country's background in terms of media education. Trying to sum up the article, there are different layers to be concluded:

- Media education is a field that strongly depends on the looked-at region or country. Especially the implication of media-related content in formal education differs immensely.

- Because of these immense differences, it is not possible to indicate one international status concerning the used terminology. Terms differ because of the countries media related and educational background.

- Media literacy is a very wide educational field that has a strong impact on engineering education, especially in terms of ICT systems engineering.

One of the essential facts and the initial position of this article is the recognizing of a huge gap in terminology being applied in this context. The article mentions and discusses these differences and, on the basis of these, discovers differences as well as similarities.

Looking at the given importance of media to the educational sector, and, in specific, to engineering education, it gets clear that the international discussion has to get widened and that the discourse is supposed to not just contain media scientists and practitioners, but also representatives of other scientific and practical domains. Therefore, it was possible within this article, to externalize a problem in terms of engineering education that mostly was (and is) not seen as a problem relating to engineering education.

Nowadays, *the* two big problems in terms of media literacy are the missing acceptance of media-related topics in terms of formal education from primary education to life-long learning, and, when talking of and discussing media literacy as well as media competencies, the missing data from lots of non-English speaking countries and areas.

The development of an internationally applicable, comparable and valid understanding of media-related terminology would provide an essential basis for further developments in lots of different domains, but is in need of encouragement from a variety of areas.

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