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Critical Media Literacy in international Large Scale Assessment?

Concepts, Measures and Results

Abstract. International Large Scale Assessment (ILSA) assess students' competencies, attitudes, and context of learning around the globe. Their results inform policy makers and guide decisions on funding, curriculum and development programs. This data is used for long-term monitoring and reporting on the progress of educational systems. The indicators measured by these assessments are reported in international monitoring databases used by the World Bank and the UNESCO, and thus play an important role in shaping the school system of the future. Most prominent examples for ILSA are the studies initiated by the Organization for Economic Co-operation and Development (OECD) and the International Association for the Evaluation of Educational Achievement (IEA). While these studies most often assess basic competencies and literacy, like reading, mathematics and science, latest assessments also focus on more broader aspects of education, like civic and citizenship or information and technology skills. Interestingly, critical media literacy (CML) has not been in the focus of these studies so far. This article aims to analyze the concepts implemented in existing studies regarding their relation to the concept of CML.

Keywords. Critical Media Literacy, International Large Scale Assessment, Educational Assessment

„Critical Media Literacy“ in international vergleichenden Bildungsstudien

Konzepte, Erfassung und Ergebnisse

Zusammenfassung. Internationale Bildungsstudien (ILSA) erfassen die Kompetenzen von Schüler:innen sowie darüber hinausgehend Kontextfaktoren von Lernen im internationalen Vergleich. Die Ergebnisse dieser Studien fließen in bildungspolitische und administrative Entwicklungen wie bspw. die Zuwei-

sung von Ressourcen und die Entwicklung von Bildungsplänen ein. Daten aus diesen Studien sind die Grundlage für langfristiges Bildungsmonitoring und Rechenschaftslegung über die Qualität von Bildungssystemen. Die erfassten Indikatoren fließen in internationale Berichtssysteme ein, die u. a. von der Weltbank und der UNESCO genutzt werden. Sie spielen also eine wesentliche Rolle bei der Weiterentwicklung von Bildungssystemen. Die bekanntesten Studien werden von der Organization for Economic Co-operation and Development (OECD) und der International Association for the Evaluation of Educational Achievement (IEA) initiiert. Diese Bildungsstudien erfassen in der Regel grundlegende Kompetenzen in Mathematik, dem Lesen und den Naturwissenschaften. Aktuelle Studien beziehen auch breitere Kompetenzaspekte ein, bspw. Demokratiekompetenz und computer- und informationsbezogene Kompetenzen. Der Aspekt „Critical Media Literacy“ hat in diesen Studien bisher keine explizite Berücksichtigung gefunden. Dieser Beitrag analysiert die Konzepte ausgewählter internationaler Bildungsstudien hinsichtlich ihres Bezugs zur „Critical Media Literacy“.

Schlüsselwörter. „Critical Media Literacy“, Internationale Bildungsstudien, Educational Assessment

1 International Large Scale Assessment and Educational Policy

International Large Scale Assessment (ILSA) are international surveys assessing competencies of students in schools, sometimes also focusing on adult competencies (for example the Survey of Adult Skills, PIAAC) or the perspective of teachers (with the Teaching and Learning International Survey, TALIS) (OECD 2019a; OECD 2019b). ILSA have been implemented into many educational systems since the 1960s. Most prominently they gained interest and power in the neo-liberal approaches of educational policy governance since the 2000 which allowed for more school autonomy while introducing new accountability structures (Lietz, Tobin 2016; Teltemann, Jude 2018; Verger et al. 2018). This turn to a more outcome-oriented educational policy called for measurable indicators of educational progress, including context factors of school quality. In many cases, this includes setting measurable benchmarks and quantifiable targets, for example national educational standards. But also global objectives like those of the UNs sustainable development goals can be seen as long-term indicators of education (United Nations 2015).

In ILSA, these indicators are a) trackable on the national level over time, as well as b) comparable on an international scale across educational systems around the globe. Continuous monitoring of these indicators helps inform governance, identify target points for policy interventions and may influence educational practice. Data from ISLA is in many cases an essential component of a countries' own strategy of educational monitoring and can inform about current developments relevant in a global society.

Educational research plays a key role when it comes to defining the theoretical foundation of the desired indicators in ILSA, like for example the definition of literacy. Moreover, its empirical approaches offer the methodological foundations for developing sound instruments to measure these indicators (Kuger et al. 2016; Wagemaker 2020). In-depth empirical analysis of interrelations between indicators, context factors and educational practices on different system levels provide empirically grounded links for quality improvement of teaching and learning practices.

While ILSA and the data they provide clearly aim to inform and guide educational policy, it needs to be reflected that they focus only on a selected range of competencies in specific areas of literacy. Consequently, areas which are not covered by empirical approaches and where sound data is missing, might be neglected when it comes to educational policies. Accordingly, as regards CML, it needs to be discussed where meaningful measures are already in place, and – if they are missing – which measures could be implemented in future ILSA to address CML as part of policy relevant indicators of education quality.

This article tries to identify potential concepts of CML in existing ILSA. By analyzing the underlying theoretical frameworks of the most prominent studies, and comparing already existing measurement approaches, connections are made to elementary definitions of CML.

2 CML and Educational Frameworks

Before thinking about measuring indicators, the theoretical foundations of the aspect to be assessed need to be specified. In the assessment of literacy, it needs to be clear what defines this literacy, i.e. which kind of behavior or knowledge can be expected of a person with a “high amount of literacy” versus a person with a “lower amount of literacy” (Hartig et al. 2008). Moreover, separate dimensions must be distinguishable to enable a clear-cut measurement. This might be an easy task when we think about, for example, mathematical literacy, but can be

quite a difficult endeavor when it comes to more complex areas of literacy. By looking at different definitions of CML, the complexity of the construct is evident. In the following, exemplary definitions are highlighted that have been selected to illustrate its multidimensionality and potential challenges for a comparative assessment.

Critical media literacy is an educational response that expands the notion of literacy to include different forms of mass communication, popular culture, and new technologies. It deepens the potential of literacy education to critically analyze relationships between media and audiences, information, and power. (Keller, Douglas 2007, p. 60)

A critical media literacy approach also expands literacy to include information literacy, technical literacy, multimodal literacy, and other attempts to broaden print literacy concepts to include different tools and modes of communicating (ibid., p. 62).

Recent approaches include data literacy as a kind of meta-CML, as “we are now entering a new stage of technological development, where human attitudes, ideologies, and power relationships are not only expressed through technology, or even built into technology – these days, they also inform and direct technology’s autonomous behaviour.” (Jandric 2019, p. 34)

When comparing these definitions, it becomes clear, that CML is not ‘one’ competence. It has many facets, dimensions and is related to numerous other competencies. Still, it could be argued that the aspect of interacting with mass media in digital networks can be identified as a common ground. CML would then include aspects of a) overall reading literacy and b) digital literacy, which are both necessary when critically engaging in and using digital media. Taking these aspects as a starting point, we can find aspects of CML in many of the current educational policy frameworks (see table 1).

Table 1: Aspects of CML in global educational frameworks

European Council (2018)	“Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.”
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Council of Europe (2022)	“Digital Citizenship may be said to refer to the competent and positive engagement with digital technologies and data; participating actively and responsibly (values, skills, attitudes, knowledge and critical understanding) in communities [...] at all levels [...]; being involved in a double process of lifelong learning [...] and continuously defending human dignity and all attendant human rights.”
UNESCO (2022)	“Beyond its conventional concept as a set of reading, writing and counting skills, literacy is now understood as a means of identification, understanding, interpretation, creation, and communication in an increasingly digital, text-mediated, information-rich and fast-changing world.”
UNICEF (2019)	“Digital literacy implies a set of competences that goes beyond digital and technical skills. It includes the ability to search, evaluate and manage information found online; interact, share and collaborate online; develop and create content; use safety and protection features, and solve problems and be creative.”

These different approaches have in common that they include a critical, evaluative, reflective usage of digital media in their broader definitions. Aspects of CML can also be found in the definitions of 21 century skills (OECD 2019c) and innovative definitions of reading literacy:

Reading is increasingly embedded into a faster-paced digital- and screen-based culture. News is in real-time 24/7 and social media reactions spread across the globe in a matter of seconds. At the same time, disinformation and fake news are jeopardizing democracies that function poorly when citizens are not well informed or worse, misled. Disinformation is not unique to digital technologies but the Internet spreads and amplifies its impact. Students need to learn how to think critically, assess the accuracy of information on the Internet, and solve problems on their own more than ever. (OECD 2021, p. 20)

3 Aspects of CML in ILSA

Based on these selected definitions of CML, which all refer to reading literacy in various aspects, it can be discussed if selected aspects of CML are already being measured in existing ILSA. Even though these studies are not designed specifically to assess students' CML, they refer to overall concepts of literacy that include digital media. Consequently, their definition of literacy differs depending on the aim of the study.

The OECD study *Programme for International Student Assessment (PISA)* assesses reading literacy, mathematical and science of 15-year-old students in 80 countries around the globe every three years. It is based on the UNESCO's overall concept of literacy with the content domains are being specified and updated by an expert group for every cycle of assessment. While reading literacy was originally seen in the context of paper-based linear texts in the first cycles of PISA between 2000 and 2006, the framework for the 2009 assessment included a component of digital reading. Accordingly, the aspect of reflecting and evaluating the source and content of texts in digital media was already included in the definitions of students' competencies (Lumley, Mendelowitz 2012). The latest definition of reading literacy PISA reads as follows: "Increasingly, reading requires evaluating the quality and validity of different sources, navigating through ambiguity, distinguishing between fact and opinion and constructing knowledge. (OECD 2021, p. 22)."

The theoretical framework of PISA further specifies reading literacy as the ability to evaluate and reflect a given source, which requires the reader to assess the quality and credibility and evaluate the source of information. Moreover, content and form including the author's intentions and viewpoint need to be taken into account and conflicting information need to be questioned (OECD 2019d).

This definition is the foundation for test and questionnaire items in PISA which measure students' competencies, but also assess context factors of teaching and learning that might influence the acquisition of literacy and CML. The individual test items of PISA are confidential and thus not publicly available, but they include tasks which asks students to distinguish facts from opinions and to judge the credibility of a source (Schleicher 2019). Students need to solve these tasks by using information about the content and the source of information they need to evaluate (OECD 2019e). Moreover, the questionnaires for students participating in PISA assess the meta-cognitive strategies students use when facing texts, including their strategies in dealing with a not trustworthy digital source (i.e. a phishing E-Mail). The questionnaires also include items to assess the context of learning and teaching. Here, students are asked if they have been taught how to decide whether to trust information from the Internet and detect whether information is subjective or biased in school lessons (OECD 2019f).

The IEAs *International Computer and information Literacy Study (ICILS)* assesses computer and information literacy of 8th grade students on an international scale. Its measures the "individual's ability to use computers to investigate, create, and communicate in order to participate effectively at home, at school, in the workplace and in society" (Fraillon et al. 2020, p. 1). The theoretical framework

of ICILS further defines aspects of this literacy as “Identifying information needs, searching for and locating information, and evaluating the quality of information.” (ibid., p. 15). This includes the ability of individuals to use ICT appropriately to access, manage, integrate and evaluate information, as well as to use information responsibly and safely. ICILS thus bases its literacy approach on reading literacy, which is not assessed separately, but can be seen as a prerequisite when dealing with digital information in written form. It also addresses both the access and the usage of digital information in its definition of literacy.

The corresponding test items are also not published but cover tasks which ask the students to explain potential issues when making private information publicly available and to judge and evaluate the trustworthiness and reliability of information found online (Fraillon et al. 2019). The respective questionnaire for students enquires about learning settings where students were taught how to work out whether to trust information from the Internet. It also asks about a self-assessment on how well they can judge whether you can trust information you find on the Internet (IEA 2023).

When comparing these definitions to the different concepts of CML, it can be argued that the concepts of literacy in both PISA and ICILS at least contain traces of CML when it comes to dealing with facts and opinion and the evaluation of trustworthy sources. In PISA, they are embedded into the reading tasks and related questionnaires, referring to CML as an aspect of reading literacy. In ICILS, it is the computer literacy that could be linked to CML, covering the media aspect. Even though these relationships are somewhat weak, and should not be over-interpreted, a look at the results of both studies might highlight the importance of covering CML more strongly in educational assessment.

4 Results of ILSA on CML

ILSA assess a broad context of students’ learning, including time spent online in and outside of school. Looking at the results, it becomes clear why CML is an important aspect of overall literacy and will become increasingly important in the future: The total time 15-year-old students spent online has been increasing in the last decade, for some countries even doubling (OECD 2017). But: Fewer than 1 in 10 students in OECD countries are able to distinguish between fact and opinion (OECD 2019g). Most alarmingly: These aspects of CML are associated with students’ socio-economic background, showing a disadvantage for those students with less educational and monetary resources at home (Suarez-Alvarez 2021). Consequently, students need to be aware of their online behaviors as

well as regarding the intention of any information they receive. Based on these results, one could claim that CML as an essential part of literacy needs to be targeted more prominently in curricula and classrooms.

This is even more important when looking at the learning opportunities regarding digital skills at school. A broad range exists between countries when it comes to digital literacy taught in school, both regarding the quantity of respective learning settings, but also the implemented content. In some countries, these topics are included in curricula across subjects, others feature specific ICT-related subjects. Learning opportunities how to detect biased information are strongly associated with the assessment on distinguishing facts from opinions (OECD 2021).

When it comes to learning settings in school, 65 % of students report being taught to work out whether to trust information from the Internet, still over 40 % of students were found to have only minimal ability to critically assess information found online. And only 2 % of students say they exercise control and use evaluative judgment when searching for information online (Fraillon et al. 2020). These findings might be related to context factors of schools and curriculum: Based on data from the ICILS study, teachers report feeling rather confident with finding teaching resources on the internet and producing digital presentations, however least confident with using learning management systems and collaborating with others online. More than 50 % of the pupils are enrolled at schools where insufficient ICT skills among the teachers were reported to hinder the use of ICT for teaching. On the school level, schools report a need for effective professional learning resources for teachers as well as incentives to integrate ICT in teaching settings.

5 Outlook: The Potential of Measuring CML in ILSA

Young people do not develop sophisticated digital skills just by growing up using digital devices. If we want to know how the competence develops in the society and learn about the role of school in teaching CML, we need more indicators focusing on the various aspects of CML in different age groups of students. Moreover, existing teaching and learning settings which enable a critical view on media need to be analyzed, as well as educational standards and curricula focusing on CML. ISLA could be a way to deliver policy relevant indicators on a global scale. The challenge, however, is to develop instruments that can be used for measuring CML: This means, that as a first step the different concepts of CML would have to be clearly defined or even aligned within a framework. In a second step, potential measurement instruments would need to be developed

and validated, to assess CML in an international comparable way. In addition to the international approaches on educational monitoring, national educational frameworks and studies need to consider country specific topics and developments which add to the global perspectives. This is especially important when it comes to linking the topic of CML to country specific curricula.

Already, various approaches exist to measure media literacy in specific age groups and usually in a defined national context. They differ in their definition of media literacy, but usually include aspects related to CML. These instruments mostly use questionnaire scales for self-reporting (see for example Lee et al. 2015; Literat 2014).

On a system level, different initiatives have set out collecting information on the topic of media literacy in society and community, curriculum, and educational contexts. On a European level, the Council of Europe publishes recommendations regarding “Media and Information Literacy” (see for example Chapman et al. 2020), and the European Commission is reflecting on criteria for assessing media literacy on a country level (Celot et al. 2009; European Commission 2011). Still, the existing challenges in assessing CML have been a topic for scientific discussion for a while now (see for example Schilder et al. 2016).

Given these challenges, it needs to be discussed how CML could be assessed in an international context to derive policy indicators. ILSA might offer an opportunity to analyze CML as an aspect of students’ competencies in the 21st century, and also to inform about educational contexts of teaching and learning as prerequisites for acquiring CML in schools. However, precise measures of any kind of literacy require precise definition of the theoretical construct underlying the measurement. In existing literature, the definitions of CML are manifold. Different aspects of CML are being considered, and the models mentioned above postulate various underlying dimensions. Consequently, latest quantitative measurement approaches which focus on student’s competencies, attitudes and values, but also learning settings can only be seen as a starting point.

In summary, we can state that single aspects relating to students’ CML can be found in current ILSA frameworks, assessment instruments, and reporting. They contribute to national reporting and international indicators and database which are being used for policy measures. However, the existing measures are not specifically developed to assess all aspects of CML as described in specific theoretical approaches mentioned above. They can be used to highlight the importance of these constructs alongside the notion that CML is an implicit aspect when it comes to teaching 21 century skills. Future frameworks of 21 century skills should

consider specific aspects of CML as distinguishable indicators that can be related to teaching and learning settings. Accordingly, measures need to be developed which reflect the different aspects of CML in a reliable and valid way.

The data currently available shows huge variance in both teachers' and students' competencies, within and between countries, when it comes to dealing with media in a digital world. Consequently, the topic of CML is relevant for educational policy and practice in a rapidly changing world. Therefore, we need assessments which target educational outcomes and competencies related to CML, and context factors relevant in teaching and learning settings. Indicators systems are needed which do not only focus on technical resources, but also analyze learning processes at schools and areas of curriculum development, including resources and innovative approaches for teacher training.

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