Digital media consumption and fake news as a challenge to lifelong learning

Utilizzo dei media digitali e *fake news* come sfida per l'educazione permanente

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abstract

Nowadays digital education and technological skills are constantly in demand and are promoted worldwide among all age ranges, with more facilitated learning processes and the aim of an optimized professionalization. Digital education in technologically equipped institutions aims to make students more active and to prepare them for a society and workplaces that are ever more performance-oriented. In view of the speed at which information is generated and distributed through the increasing use of digital media, the management of knowledge and training in how to recognize fake news have become serious challenges for lifelong learning. Hence, this paper presents the promotion and development of critical thinking skills, through teachers' training, in order to detect false, incomplete and obsolete information. From an educational point of view, not only does the potential of digital media-based learning opportunities emerge, but also their limits, which are therefore critically analyzed here.

Keywords: lifelong learning, literacy, fake news, digital media, teacher education

L'apprendimento delle tecnologie e l'educazione digitale sono competenze ormai universalmente richieste e promosse in tutto il mondo e a tutte le età, con prospettive di apprendimento sempre più facilitato e anche finalizzato ad una professionalizzazione ottimizzata. L'istruzione digitale nelle istituzioni dotate di tecnologie informatiche mira a rendere gli studenti più attivi nel processo di apprendimento in generale e a prepararli ad un futuro in cui la società e i luoghi di lavoro saranno sempre più orientati alla performance. Considerando la velocità di generazione e di diffusione delle informazioni connesse al crescente uso dei media digitali, la gestione del sapere e la formazione al ricono-

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scimento delle fake news rappresentano delle grandi sfide per l'educazione permanente. Pertanto, attraverso la formazione degli insegnanti, si rivela opportuno promuovere lo sviluppo del pensiero critico per poter individuare le informazioni false, incomplete e obsolete. Da un punto di vista educativo emergono quindi non solo il potenziale delle opportunità di apprendimento offerto dai media digitali, ma anche i suoi stessi limiti, che sono criticamente messi in discussione in questo articolo.

Parole Chiave: apprendimento permanente, literacy, fake news, media digitali, formazione degli insegnanti

1. Introduction

According to data from an OECD Skills Studies (2016) Italy ranks second in Europe in terms of functional illiteracy: every one out of four adult Italian is able to read and write, but has difficulties in grasping simple information, for example in understanding instructions. Compared globally, Italy comes last, behind Jakarta, Turkey and Chile (OECD, 2016, p. 41). In the OECD study reading comprehension in terms of word, sentence and paragraph comprehension were tested. The findings of the study showed that the results in reading comprehension of paragraphs are lower than sentence comprehension in six countries: we can see the widest gap in Italy. For example, the summarization and understanding of main ideas in short passages within complex or coherent texts poses a challenge that is difficult to master. Presuming these results are significant, it is interesting but also necessary to verify a possible connection between declining reading competence or text comprehension and increasing media use – for example, the JIM study (2015) has shown that 11% of 9 to 24-year-olds are never offline. Critics might comment that the downturn in text comprehension is not a new phenomenon. However, recent studies indicate that the spread and use of smartphones (Twenge, 2017; Kindermann, 2018) and a resumed and clear downward trend in reading literacy began simultaneously. If adolescents and adults have inadequate text skills, this can lead to information and texts being only partially correctly or even incorrectly interpreted in institutionally organized teaching and learning situations as well as in company and private everyday life. Further processing may lead to the production of fake news whether intentionally or not. Fake news is not a new concept, as it has always been discussed scientifically, although different terms have

been used in historical periods. Dealing with the reliability of information and sources represents one of the main challenges of education from a lifelong learning perspective. Education provides the basis an entire life cycle is built upon (e.g. Marescotti, 2015; Dozza, 2012). Thus, lifelong learning is characterized by knowledge transfer that is not limited in time or space and in the sense of a holistic approach. Primarily lifelong learning is to be considered as the capability to create continuity of education and training to life's different stages (Loiodice, 2016). On that point, Dozza (2018) highlighted the two existential and professional needs of individuals today: a) learning how to coordinate oneself in a collective life in today's fast-paced world; in fact each person should be able to create and defend a public space and be aware of increasing educational poverty; and b) responding to the growing demand for more professionalization, which is particularly ignored in educational science due to the discrepancies between theory and practice as well as research and education. In this paper the first aspect – the need for critical thinking (CT) in relation to information research and knowledge acquisition – is prioritized and discussed in great detail. Lifelong learning and education must consist of more than a random unreasoning accumulation of facts and skills. Wulf and Zirfas (2014) point out that the difficulty of distinguishing true from false is a timeless and central topic of pedagogy. Since Socrates, it has been evident that a skeptical attitude or rather differentiated thinking process means being able to distinguish true from false information. The development of an independent and thorough CT is a necessarily prerequisite for the capability of determining the cognitive value of information.

New media and digitization have a major impact on private and professional life over the one's life span, since they allow a quick access to knowledge and an immediate generation of new literary works. Moreover, it enables to change existing information and to spread its outcomes. Thus, the reflected management of (media-generated) knowledge is a fundamental skill that every citizen should develop and increase throughout their life cycle. In fact, in this contribution a particular emphasis is placed on the further development of these competences in pre- and in-service kindergarten and primary school teachers who have a special role in the process of lifelong learning by promoting CT and a media-critical attitude in children and adolescents particularly with regard to fake news and digital media consumption.

2. Digital media use and literacy

Literacy primarily includes reading and writing skills as well as text comprehension and understanding of meaning, linguistic abstraction or familiarity with reliable sources of information (OECD, 2015, p. 10). In the latest PISA study, media behavior is considered for the first time as it is presumed that the understanding of reading literacy will develop along with the changes in society and culture. The tasks include scenarios in a simulated web environment in which the credibility of continuous and non-continuous text formats is to be assessed, thus requiring the ability to compare and weigh potentially contradictory information from multiple sources in different text types and contexts (OECD, 2019). Previously conducted studies report, for example, that 56% of young people watch television daily or several times a week, and that 42% of them learn concurrently (JIM, 2006). Children who watch a lot of television are thought to have less time for extracurricular cognitively stimulating activities. The explanatory value for the validity of this hypothesis has not been clearly demonstrated yet and also only on an empirical level so far (Koolstra, van der Voort & van der Kamp, 1997; Ennemoser, 2003). Moreover, Lukesch (1996, p. 45) examined whether a positive effect can inevitably be presumed with regard to the stock of knowledge in the case of extreme attention to the information offered by mass media. He concludes that even older people who depend on television information do not process information in a correspondingly deep manner and concludes that this results in superficial knowledge about the world. The conclusion can be supported by Wirth (1997, pp. 165-167) who states that those who have more knowledge have to pay less cognitive attention to process information. People with less prior knowledge have to make greater efforts to distinguish between what is relevant and what is irrelevant. Therefore, the mere availability of digital information does not automatically have a positive effect on the learning outcomes. Kuhlen (1991) attributes this lack of positive effects to the serendipity effect phenomenon. This effect results from the superposition of the original search for information while navigating the Net, for example, in the context of self-directed learning. The learner loses sight of the original aim and thus no learning takes place.

3. CT as a prerequisite for learning with digital media

CT has a long tradition – the concept was already developed more than 2500 years ago by Ancient Greek philosophers such as Socrates, Plato, and Aristotle – and it is still regarded as an important educational goal.

According to Dewey, experiences are the central starting point for learning. Reflection is "thinking experience". The greater the difference between the familiar and the new, the more depth this process gains, and the more reflection is required. For Dewey, the starting point for reflection and thus for learning, is always a perceived uncertainty, a doubt, or a problem. On that basis, a first assessment of situation is made, and further findings are sought which should help to understand the phenomenon. In a third stage, the situation and its circumstances are explored in more detail. In a fourth stage, an experimental evaluation is carried out, which is finally checked in a fifth stage and found to be true or false (Dewey, 1910/1951). Moreover, he also defined the skills entailing the abilities of mental processes of discernment, analysis and evaluation applied to any kind of information and background in order to achieve a logical final understanding, judgment or further conclusion. In addition, CT needs knowledge of methods (Glaser, 1941) as well as subject matter knowledge.

In order to tackle the current challenges described above, it is necessary to address education from the first stage, namely early childhood. The spread of new media has fueled the debate on so-called digital natives – the generations who were born with the availability of digital technologies from the earliest ages of life – and require a rethinking of education and its aims in the broadest sense (Ugolini, 2016). Due to the fact that the acquisition of media competence includes a critical reflected handling of digitally created and distributed information concerning the entire span of all learning process, this has to be a basic topic for pre- and in-service teachers. In this context, the importance of promoting media competence in early childhood is emphasized and the lack of media-pedagogical topics in the education and training of future kindergarten and primary school teachers is deplored (Eder & Roboom, 2014). Teachers as role models have a fundamental influence on students dealing with media and knowledge. If the aim of education is the development of self-determination as a fundamental capability of the next generation, consequently it is essential to examine which competences become necessary

in a society shaped by digital media (Kammerl, 2018). In particular, the ability to reflect should be pointed out. In fact, adolescents rely on the elder generation; only with this inter-generational support they are able to develop the attitude to reflect critically on media, its use and the social context, more precisely a society that is characterized by an intensive media use (see e.g., Kammerl, 2018). Already young children are already learning how to use media in no time and without the help of adults – especially mobile phones and the computers. However, a critical reflection of the contents and their accuracy is not quite easy to acquire. In this regard, Hug (2018) stresses that the ability to reflect – besides the cultivation of values such as equal educational opportunities, empathy, dignity, solidarity, sustainability, and participation – is one of the challenges of pedagogy.

4. Fake news and knowledge reproduction

Media education aims at a critical management of new knowledge and this, in turn, requires a reflection on the teachers' own media socialization. Prospective kindergarten and primary school teachers should not solely acquire didactical competences in dealing with new media, but especially competences in analyzing its contents. Therefore, self-determination cannot be understood as an isolated process by a single person. It is always influenced and guided by the elder generation. If it is about differentiating between false information – or rather fake news – and trustworthy information media education for adolescents is currently gaining more and more importance. As above-mentioned, digital competences are growing in demand nowadays and this, in turn, affects the education and further training of the teaching staff. At this point a crucial distinction needs to be made between, on the one hand, media-didactical competences concerning the transmission of specific contents by various media, and, on the other hand, media-pedagogical competences including the reflection on media, media behavior and its information contexts. The attention being paid to the latter in research and teaching is very small.

A study on information literacy in connection with scientific work conducted by Rebele (2010) at the University of Augsburg has shown that "almost half of the students [have] problems in structuring their re-

search systematically and [complain] about the incomprehensibility of the results" (p. 163). Moreover, according to the author, young adults equate the quality of the literature available on the Internet with that of scientific journals. Another research at the Free University of Bozen-Bolzano has shown that the participating student teachers prefer classical printed media such as paper-based textbooks for their studies (Gross, Herzer, 2019). Nevertheless, they integrate this information with their notes from courses and online media. New media create new ways of receiving and acquiring knowledge. Intensive online media consumption is to be seen as a consequence of media socialization based on more or less developed literacy competence in digital learning environments. This fundamental competence develops over the course of one's life and it is therefore of interest – in the pursuit of lifelong learning – to examine this competence, not only among early learners, but also among future teachers. A high level of digital literacy is needed so that all members of a society can deal with the ever-growing amount of information and assess its quality, credibility and relevance. The management and processing of this information is an essential competence to be acquired.

In Italy we can find little research on media literacy among students and (prospective) teachers. The ICILS carried out in 2013 (International Computer and Information Literacy Study; Fraillon, Ainley, Schulz, Friedman & Gebhardt, 2014) compared the digital competences of 14-year-old students from 21 different countries. The results encouraged many countries, for example Germany, to take initiatives to improve learning with and about digital media in schools (Kammerl, 2018). Italian students did not take part in this study; however, the follow-up study in 2018 integrated Italian students and the results of this study, which will be published in 2019, will provide information on their digital competences in a country comparison. However, in the Italian context, the report "Students, Computers and Learning. Making the connection" (OECD, 2015), which is based on data from the OECD PISA study, shows that in 2012 Italian adolescents spent on average one and a half hours a day online (93 minutes compared to the EU average of 104 minutes). In Italian schools, online time averaged 19 minutes, while the OECD average was 25 minutes, and the Italian students' digital reading skills were above the OECD average (504 compared to 497 points). However, statistical non-significance should be mentioned. In addition, the data have shown that 15% of students (12% in the OECD average) made

navigation errors on the Internet and only 25% corrected themselves by returning to the most suitable navigation route. These results have also led to media literacy initiatives in Italy (e.g., *Piano Nazionale Scuola Digitale*; see OSCE, 2017). Moreover, the Italian Ministry of Education, University and Research (MIUR) has responded – inter alia to these new challenges – with the development of a curriculum for Digital Civic Education (*Curriculum di Educazione Civica Digitale*; see MIUR, 2019) that aims at helping students recognize false news and to guide them on how to get information in a correct and exhaustive way.

With regard to the media behavior of students, research results by Gross and Herzer (2019) have shown that students use online course management systems for their studies less than search engines, such as Google, or online encyclopedias, especially Wikipedia. This suggests that also future kindergarten and primary school teachers accept instant knowledge to complete their tasks quickly. Although they are well aware of the fragility and possible unreliability of this knowledge, they prefer such new ways of learning and of acquiring knowledge to studying selected texts and materials from academically more highly-skilled academic experts in specially established online course management systems as this might be too time-consuming for students. Frick (2018) also emphasizes a general media criticism, which no longer can be reduced to groups and individuals from the traditional left-wing political spectrum; rather, this phenomenon has universalized. Since experts from different disciplines practice media criticism, there is generally no knowledge channel and no expertise that can be blindly trusted, not even knowledge transferred at university.

Hence, it seems indispensable to innovate also the education and further training of educational personell. In particular, the development of the necessary pedagogical competences has to be addressed, in order to allow the promotion of analytical and reflective competences among learners. The empirical state of the research on these teachers' competences – that is to say on how to promote the development of CT among children and adolescents – is still in its early stages (see e.g., Kammerl, 2018). Even though the usefulness and feasibility of promoting media competence as an indispensable aspect of a democratic society is still being discussed in kindergarten and primary school, experts agree that the development of media competence in young children has to be supported. In this respect, it is not sufficient to increase digital media use in

teaching as this does not help to develop the necessary analytical and reflexive skills that individuals need to identify fake news.

According to Wardle (2017), different types of misinformation and disinformation can be distinguished. In the first set, misinformation is based on a lack of prior knowledge:

– Dealing with sources: a lack of prior knowledge leads to the generation of false information;
– Incorrect links: contents do not correspond with other contents;
– Wrong connections: authentic contents which are put in connection with wrong information and which are then further processed.

The other misinformation arises arbitrarily, that is, misinformation arises intentionally and not (only) through lack of prior knowledge:

– Revised contents with the intention of deception;
– Invented contents.

In educational contexts, it must therefore be a matter of enabling learners to differentiate among these types of mis information.

5. Implications and conclusions

The implications regarding lifelong learning relate, inter alia, to media ethical aspects of promotion of democracy. The ability to separate true from false information can only be developed if learners can resort to a solid basis in terms of content, that is, substantial prior knowledge. In addition, it is indispensable to learn how to research reliable information, to deal with (online-)sources, and how to generate new knowledge without neglecting or misusing prior knowledge. Hence, an emphasis must be put on education and further training on concerning an appropriate management and connection of different pieces of information from several different sources. To promote a reflexive use of information and knowledge among students, pre-service teachers and in-service teachers it is essential to guide them in their acquisition of the necessary skills. On the basis of different studies, we can infer that CT in online learning environments can be promoted with an interplay between content chunks,

authentic problem solving, as well as co-construction in small groups within media-based seminars (Gördel, Schumacher & Stadler-Altmann, 2018). To trigger the development of CT, and consequently, implement a culture of CT the following effective techniques can be applied: an in-depth analysis of (online)-sources by checking the author's credentials, verifying sources, reading beyond the headlines, abstracts and summaries, applying high-order-questions, requesting a paraphrased summary, critically questioning contents and emphasizing the need for thinking with logical consistency, and checking statements for assumptions and knowledge, including different perspectives (see e.g., Ennis, 2003). Further research is needed to visualize the didactical processing of knowledge through decontextualization and the subsequent recontextualization from the learner's point of view (cf. Swertz, 2005, cf. Dryer, 2011) in order to track potential fake news or rather information disorders in the process of mediation and appropriation. All these strategies contribute to turn passive consumers of media into active users; for a lifetime at best.

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