



CRITICAL MEDIA LITERACY IN DIGITAL BASIC EDUCATION IN TEACHER TRAINING: A CASE STUDY FROM AUSTRIA

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Abstract

Due to the implementation of digital basic education in teacher education programs at many institutions in Austria, this study aims to examine the integration of critical media literacy in teacher preparation for digital basic education (Digitale Grundbildung). An online survey was conducted using a critical media literacy framework, and the results revealed that many dimensions of critical media literacy were integrated into the course instruction, albeit to varying degrees. Despite the challenges, the promising results demonstrate the potential of incorporating critical media literacy into media education training for teachers.

Keywords: Media, critical media literacy, teacher training, ideology critique

1. Introduction

Given the impact of contemporary media on democracy, education, and society (Kellner, 2021), critical media literacy can engage individuals in their concrete situations, challenging them to question their role and empowering them to engage as active meaning-makers in future situations (Gennaro et al., 2024). However, practicing critical media literacy requires more than teaching with and through media. Rather, it requires a critical understanding of media within their social, political, economic, and cultural contexts. This understanding enables individuals to explore human interaction with media objects, texts, and structures by critically questioning representation, ideology, and economic issues of media (Gennaro et al., 2024).

Media literacy education begins with teachers (Butler, 2019). In fact, for media literacy to become part of the school experience, teachers need to be literate first, as they can not teach what they have not learned (Goetze et al., 2005). In this context, Austria has initiated the systematic integration of media education into teacher training programs in 2023, along with the implementation of digital basic education (Digitale Grundbildung) as a compulsory subject in the school curriculum, effective from September 2023. Consequently, many teacher training programs at universities and university colleges of teacher education (Pädagogische Hochschule) have begun offering training and further education for in-service and pre-service teachers under the title "Digital Grundbildung" (digital basic education).

To date, little research has examined the integration of critical media literacy into teaching practices in teacher education programs and Digital Grundbildung training in Austria. Additionally, there is a lack of research investigating whether any changes have occurred in trainees' perspectives regarding media education after receiving training.

This study addresses the issues of teacher training in media education by examining a teacher training seminar on digital basic education (Digital Grundbildung) offered by the Teacher Education Center at the University of Vienna in Austria for pre-service teachers. It will explore whether critical media literacy is integrated into instructional practices in the training. Furthermore, given that the majority of relevant research and literature on media education in Austria is grounded in theories originating from Germany and that there is a scarcity of applying international approaches (Trültzsch-Wijnen, 2013, 2019), this study also aims to address this gap. Using the critical media literacy approach proposed by Kellner and Share (2019), this study will investigate the incorporation of critical media literacy in a seminar on Digital Grundbildung in teacher education. This research could contribute to developing critical media literacy in teacher training programs and schools.

2. Media literacy in teacher training

A substantial body of research on media education in teacher training programs has revealed that these programs tend to focus on how to use media in the classroom rather than on teaching about media (Gretter & Yadav, 2018; Salomaa, Palsa, & Malinen, 2017; Tiede & Grafe, 2016; Tiede, Grafe, & Hobbs, 2015).

In Austria, Swertz's (2015) study of secondary teacher education curricula indicates that media literacy is scarcely addressed and not recognized as a distinct subject. Technology-enhanced learning is acknowledged only in limited instances, primarily to familiarize teachers with using media in their instruction. Teaching about media, fostering media literacy, and equipping educators to impart media literacy skills have been neglected in these programs.

Tiede, Grafe, and Hobbs (2015) found comparable results in their study. They analyzed teacher education programs at 316 colleges and universities in the United States and 64 in Germany, using a survey of pre-service teachers enrolled in these colleges and universities. A significant proportion of U.S. pre-service teachers reported a focus on media use in teaching practice. Their German counterparts showed a similar trend, albeit with a greater emphasis on media education (Tiede & Grafe, 2016).

In Finland, a research conducted by Salomaa, Palsa, and Malinen (2017) revealed that teacher training programs focus more on the educational applications of information and communication technologies and digital learning environments than on media and sociocultural perspectives related to media. In a survey involving 448 teacher education students from Finnish universities, the participants expressed the view that the teacher education programs in Finland offered insufficient media education, with 48.4% indicating it was too little and 23% stating it was much too little.

In the United States, Gretter and Yadav (2018) conducted research that included semi-structured interviews with 19 pre-service elementary and secondary educators enrolled in a teacher education program at Midwestern University. The findings revealed a significant deficiency in preparation for teaching media and information literacy pedagogy. However, the majority of pre-service teachers acknowledged the importance of media and information literacy in enhancing their future students' careers and lives. In a subsequent study by the same authors, which utilized focus groups of 12 female pre-service teachers who had completed an introductory educational technology course incorporating media and information concepts for approximately two weeks, the predominant focus was found to be on teaching with technology rather than on the technology itself. Most participants expressed uncertainty about how to effectively teach media and information literacy to their students. From the pre-service teachers' viewpoint, the primary advantages of teaching media and information literacy were preparing students for college, educating them about internet safety, and equipping them for their personal lives.

Numerous studies have highlighted the positive effects of teacher training in media education, particularly regarding its influence on educators' views of the subject. In their research, Ranieri, Bruni, and Kupiainen (2018) investigated the E-Media Education Lab project in six European countries, studying a sample of 279 pre-service teachers. Their findings revealed that the teachers were highly satisfied with critical analysis and media production. Through surveys and field notes, the study revealed that, although the participants considered group work to be the most effective teaching method, they noted deficiencies in clear, transparent pedagogical frameworks for media education, as well as challenges related to time management.

Scully and Kupersmidt (2011) found that a one-day media literacy workshop significantly influenced elementary school teachers' beliefs and knowledge about media literacy. The study included 18 teachers who participated in the intervention and 23 teachers in the control group. Teachers who participated in the workshop demonstrated stronger beliefs about the importance of media literacy education and familiarity with it. They also exhibited greater proficiency in media deconstruction skills compared to the control group.

Yavuz-Konokman (2020) highlighted the positive impact of a course focused on media and critical literacy for pre-service teachers. The study used questionnaires and journals with open-ended questions to evaluate the "Thinking Education" course offered to pre-service social studies teachers at Bartın University's Faculty of Education in Turkey during the 2016-2017 academic year. The educators received training aimed at improving their ability to think critically about media messages and texts. The findings indicate that the participating teachers' scores improved, demonstrating their ability to read and write critically about media messages and texts.

A shift in teachers' perspectives, transitioning from a protective stance to a critical perspective regarding digital and media education, is revealed in Botturi's (2019) research on a digital and media literacy course designed for in-service primary and secondary teacher training at a Swiss professional university. The study employed quantitative pre- and post-surveys, as well as qualitative follow-up interviews. The findings also demonstrate that teachers are incorporating digital and media literacy into their classroom practices.

Dolanbay (2022) examined an European Union initiative at a public university during the 2021–2022 academic year. The study focused on the media literacy of pre-service teachers from various disciplines. The research

revealed how these pre-service teachers' media literacy levels progressed from the beginning to the end of their course. Data were collected from 160 pre-service teachers using a media literacy scale, student activity sheets, observations, and interviews with 25 participants. The results showed that the prospective teachers developed an awareness of media literacy. They gained knowledge of issues and skills that promote media literacy, such as the careful use of media, the critical evaluation of media content, and a better understanding of the individual and societal impact of media.

The review of existing literature on media literacy in teacher training reveals gaps in certain areas. Notably, it highlights the significant lack of teacher education programs focused on critical media literacy worldwide. Furthermore, there is a dearth of scholarly research on incorporating critical media literacy, especially its critical dimension, into teacher training programs.

Additionally, although digital basic education (Digitale Grundbildung) has been incorporated into many teacher education programs in Austria since 2023, research examining the integration of critical media literacy into these training programs is scarce. This study aims to address this shortcoming by investigating the integration of critical media literacy into instructional practices in a digital basic education course for pre-service teachers at an Austrian university. Furthermore, this research will contribute to the existing literature by providing an international perspective on media education; such studies are lacking in Austria (Trültzsch-Wijnen, 2013, 2019).

3. Theoretical framework: Critical media literacy

There are different perspectives on media education and literacy. In this section, we will provide an overview of the five primary approaches, primarily classified by Buckingham (2019) and Kellner and Share (2005, 2007). Additionally, we will discuss the perspective selected as the theoretical framework for this study.

The *instrumental* or *technical* perspective is recognized as one of the mainstream viewpoints. It perceives media education primarily as the instruction of technical competencies and the utilization of media as a teaching tool, rather than as teaching about media. This perspective fails to engage with the critical dimensions of media and technology and its associated social, economic, and political implications.

The next approach, the *protectionist* or *defensive* approach, stems from concerns about media influences and seeks to protect or inoculate students from potential media threats, such as manipulation and addiction (Share, 2009). However, by examining media in isolation from broader social, cultural, and economic contexts, this approach oversimplifies social issues. It also views media audiences as passive recipients who automatically internalize any message conveyed through media (Hobbs, 1999).

The third approach, known as *media arts education* or *creativity* (Kellner & Share, 2007; Buckingham, 2019), emphasizes the importance of creativity and the production of art and media. However, this approach tends to overlook the critical examination of power dynamics and structures of oppression (Kellner & Share, 2009) and views creativity as inherently positive regardless of the nature or intended purpose of the creations (Buckingham, 2019).

The fourth perspective is *Media Literacy Movement*, which downplays the importance of ideology critique and power relations (Livingstone, 2013). This movement has found its way into educational institutions in various countries, often overlooking the political dimensions of media education and presenting it as neutral and free of ideology and bias. As a result, this approach weakens the transformative potential of media education to challenge oppression and develop democracy (Kellner and Share, 2007).

The final perspective, *critical* approach, encompasses a variety of viewpoints, and many media education scholars do not have a clear definition of criticality in media education. According to Buckingham (2019), critical thinking is a reflexive process that "demands in-depth knowledge, rigorous analysis and careful study; it requires us to reflect on our personal uses of the media, and our emotional and symbolic investments in them; and it entails a broader awareness of how media relate to more general social, cultural, politic and historical developments" (Buckingham 2019, p.41). Critical thinking in media education primarily focuses on issues of economics, politics, ideology, representation, and social justice while also addressing aesthetics, pleasure, and fantasy (Buckingham, 2019, 2022).

Dieter Baacke's concept of media literacy is well-known in the German-speaking countries. In his view, media criticism encompasses three key dimensions. The first dimension involves examining concerning social phenomena, such as the concentration of corporate power within the media sector. The second dimension focuses on self-reflection regarding individual media choices and behaviors. The third dimension pertains to the ethical consideration of both social processes and personal actions, emphasizing the importance of not harming others (Swertz, 2022).

Another one is Kellner and Share's (2019) critical media literacy, which is used as a theoretical framework in this research. They define "critical as an aspect of a dialectical, sociocultural, and analytical process.... critical

thinking that is more than just a cognitive idea; it is also a sociocultural understanding that seeks to develop in students a social consciousness as well as a working knowledge of how media operate” (p.19). In this regard, critical media literacy aims “to engage with media through critically examining representations, systems, structures, ideologies, and power dynamics that shape and reproduce culture and society” (Share, 2022, p. 131). The politics of representation and the questioning of power, bias, and ideologies, such as sexism, racism, and classism, in media are central concerns (Hammer, 2009).

Critical media literacy is a political project for democratic social change that develops skills that could support the process of democratization and civic participation (Kellner & Share, 2007). As Masterman (1997) points out “the democratization of institutions, and the long march toward a truly participatory democracy, will be highly dependent upon the ability of majorities of citizens to take control, become effective change agents, make rational decisions (often on the basis of media evidence) and to communicate effectively perhaps through an active involvement with the media” (p.60). Thus, critical media literacy not only empowers students to resist media manipulation, but also encourages their active participation in social and political processes through the constructive use of media and the creation of alternative media productions. (Kellner & Share, 2007, 2019).

Critical media literacy is not merely challenging problems and negative consequences, and recognizing media bias, it also celebrates positive representations and beneficial aspects of them (Share, 2022). Cultivating critical media literacy empowers students by fostering a critical awareness of media and enabling them to construct their own meanings through these platforms and technologies. Indeed, media creation can “enlighten students to the potential that they have, as media producers, to shape the world they live in, to help turn it into the world they imagine”(Morrell, 2012, p. 302). While a critical understanding of media is central to media education, this analysis must also inspire students to seek alternatives and demand change (Buckingham, 2019).

The aforementioned approaches to media literacy and media education were applied to analyze the participating teachers’ perspectives on media education. To address the research question concerning the integration of critical media literacy in teacher training in digital basic education (Digitale Grundbildung), we used Kellner and Share’s theory of critical media literacy because it is a political project that promotes justice-oriented citizens and democratic social change (Kellner & Share, 2007; Share & McBride, 2022).

Furthermore, Kellner and Share introduced the concept of “social and environmental justice” to emphasize the critical and social justice dimensions of media literacy. “Without a critical frame, the core concepts (of media literacy) can become tools for neoliberalism and lose their transformative potential”(Ferguson, 2001, as cited in Share & McBride, 2022). Through this concept, they also incorporate environmental issues and the climate crisis into media education to analyze these issues from a critical media literacy lens, which is often overlooked in media literacy perspectives and education. Moreover, critical media literacy applies an intersectional approach to analyze classism, racism, sexism, heterosexism and other forms of discrimination and oppression in media messages. They developed the following core concepts and guiding questions from media literacy centers (Kellner & Share, 2019):

Social Constructivism: All information is co-constructed by individuals and/or groups of people who make choices within social contexts. Who are all the possible people who made choices that helped create this text?

Languages/Semiotics: Each medium has its own language with specific grammar and semantics. How was this text constructed and delivered/accessed?

Audience/Positionality: Individuals and groups understand media messages similarly and/or differently, depending on multiple contextual factors. How could this text be understood differently?

Politics of Representation: Media messages and the medium through which they travel always have a bias and support and/or challenge dominant hierarchies of power, privilege, and pleasure. What values, points of view, and ideologies are represented or missing from this text or influenced by the medium?

Production/Institutions: All media texts have a purpose (often commercial or governmental) that is shaped by the creators and/or systems within which they operate. Why was this text created and/or shared?

ocial & Environmental Justice: Media culture is a terrain of struggle that perpetuates or challenges positive and/or negative ideas about people, groups, and issues; it is never neutral. Whom does this text advantage and/or disadvantage?

4. Method

The study addresses three questions: 1. Is critical media literacy integrated into the teacher training in digital basic education (Digitale Grundbildung)?

2. Does the perspective of participating teachers on media education change after the training? 3. What are the successes and challenges of the training?

The course design

The seminar, *Didactics of Digital Basic Education* (Fachdidaktik Digitale Grundbildung), was offered at the Center for Teacher Education at the University of Vienna, 5 ECTS, one session per week for 1.5 hours (12-15 sessions per semester). One ECTS (European Credit Transfer System) credit corresponds to an average workload of 25 full hours. Course participation as well as the preparation and follow-up of the course, the duration of the exam and studying time are considered as part of the workload. Most of the students were pre-service teachers, and a few were in-service teachers. The seminar aimed to develop the ability to implement the Digital Basic Education (Digitale Grundbildung) curriculum in teaching practices with the help of media as well as the ability to evaluate one's own teaching. The seminar covered a variety of topics on media and media education through lectures, discussions, and group work. Students created lesson plans for most topics and received feedback from their peers and the instructor.

Data collection and analysis

To answer the questions, data were collected through an online pre/post-survey of the course from pre-service and in-service teachers. Data regarding the integration of critical media literacy into the seminar teaching practices, as well as the challenges and successes, were collected through a post-survey. This survey was completed by 38 participating teachers (30 female, 7 male, and one who did not specify their gender) after three semesters during the 2023-24 academic year. Data regarding the participants' perspectives on media education before the training course were collected through a pre-survey completed by 60 participants.

We adapted a previously created questionnaire using the core concepts of critical media literacy by Kellner and Share (2019), as well as the guiding questions, to examine the integration of critical media literacy into a kindergarten teacher training in media education. The content validity of the questionnaire was assessed by two experts in the field of media literacy. An expert in the field reassessed the content validity of the adapted questionnaire.

The questionnaire consisted of 29 items, including 4 demographic questions, 4 closed and open-ended questions about the participants' views on media education, 2 questions about challenges they experienced in the seminar as well as successes, and 19 closed-ended questions about the integration of critical media literacy. Items for critical media literacy included 3 multiple-choice questions, 9 Likert scale questions with a choice of responses of "never", "1 time", "2-3 times", "4-5 times", "more than 5 times", 6 Likert scale questions with the options of "true", "partly true", "not true", and one Likert scale question with a choice of responses of "almost all", "many", "some", "a little", and "almost nothing".

Descriptive statistics were used to analyze the quantitative data. A theory-guided content analysis (Mayring, 2021) was applied to the qualitative data collected from three open-ended questions about participants' perspectives on media education. Using the aforementioned four perspectives on media education, the instrumental, protectionist, creative, and critical approaches, a code book was created to code and categorize the qualitative data concerning the trainees' views on media education. The findings regarding the trainees' views on media education were then compared with the pre-survey results to demonstrate any changes in their views on media education and literacy after the training. Any text that could not be categorized using the predetermined codes was considered a new code. These new codes were analyzed to determine if they represented a new category or perspective on media education. Qualitative data about the training's challenges and successes were analyzed using open coding only.

5. Results

The results provide an overview of the competencies acquired by the trainees during the training and the integration of media and critical media literacy into teaching practices. They also include teachers' perspectives on media education and literacy before and after the training, as well as the training's challenges and successes based on the experiences of the surveyed teachers.

Acquired Competencies

In response to the question about the competencies acquired by the participating teachers during the seminar, the highest frequency was reported for media reflection skills (e.g., media system, attention control, news value, etc.) (81.6%), while the lowest one was reported for programming skills (e.g., coding, algorithms, modeling) (0%). 34.2% of the surveyed teachers mentioned the acquisition of ideology critique skills (the ability to recognize media representations of different ideologies such as racism, sexism, classism, capitalism, ...).

Figure 1 illustrates that a great part of respondents reported they had acquired media production skills (71%). The acquisition of theoretical and pedagogical skills was indicated with an identical percentage (58%) followed by creative software skills (video editing, sound editing, and image editing) (52.6%), skills for dealing with dangers on

the Internet (cyberbullying, sexting, stalking, etc.) (44.7%), media analysis skills (symbols in video games, film genres, etc.)(42%), technical skills (use of devices) (21%), and standard software skills (operating system, office software) (5.3%).

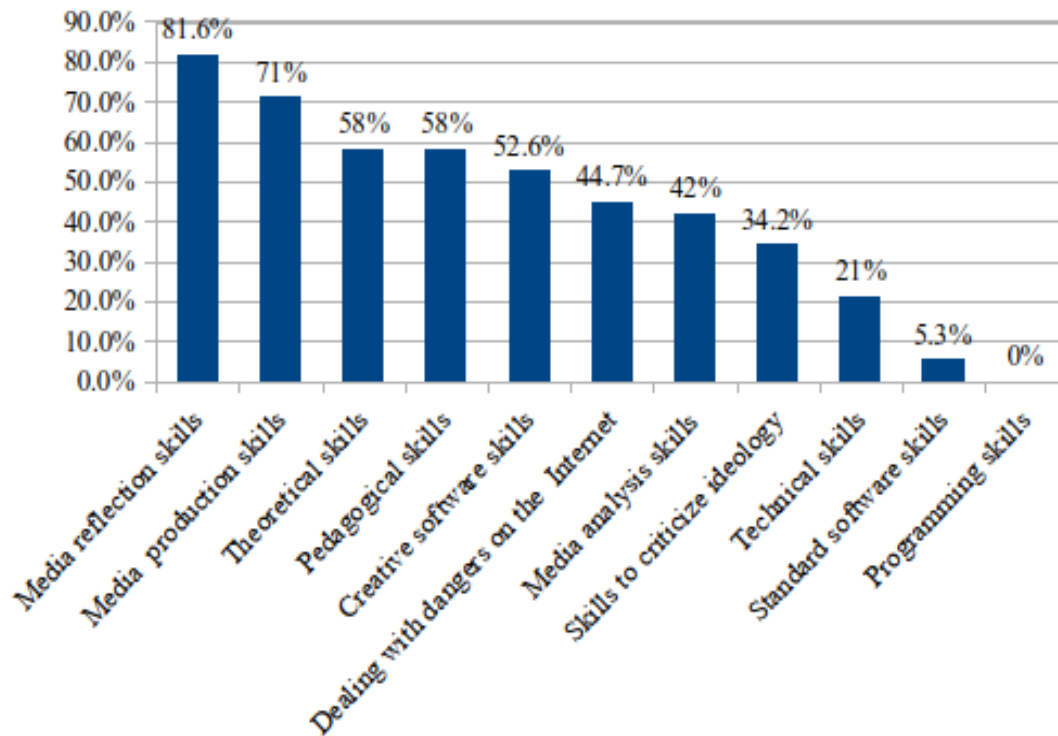


Figure 1: Competencies acquired in the seminar

Teaching with Media

In response to the question regarding the types of media they engaged during the course, the results demonstrate the highest engagement with social media (81.6%), followed by the internet (68.4%) and search engines (47.4%). By contrast, radio, photos, office software, and blogs were reported as having the lowest engagement (2.6%). Very few respondents mentioned that they did not engage with any media (2.8%). Teaching with magazines, audio streaming, and films occurred with the same frequency of 5.3%. Engagement with books,

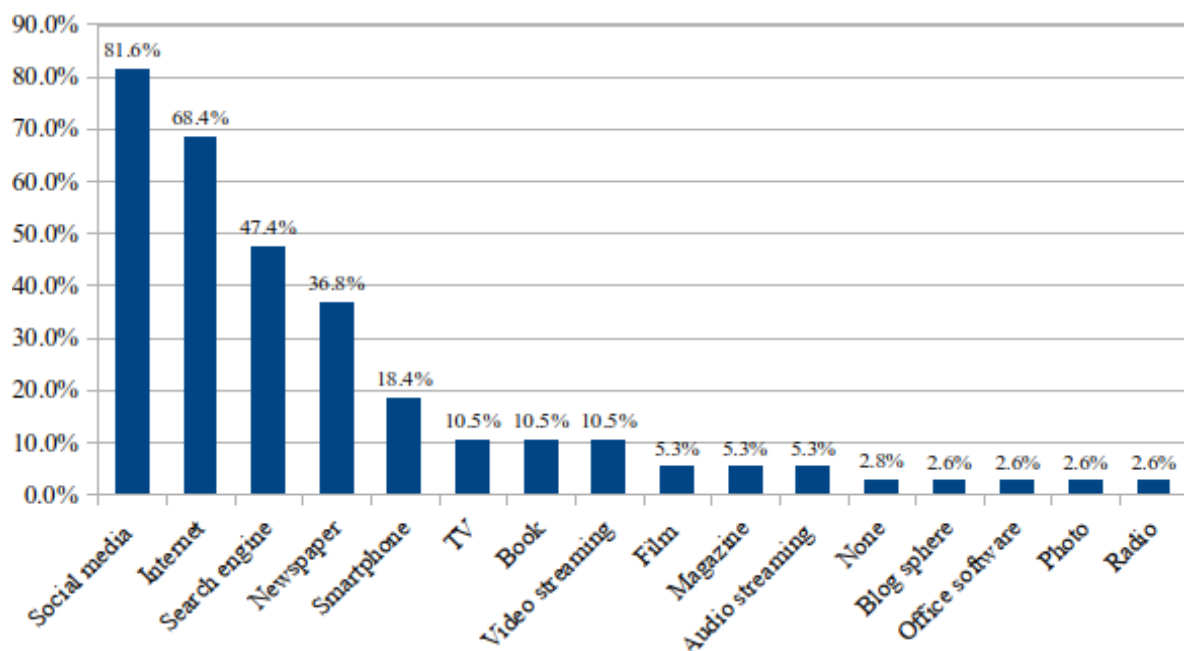


Figure 2: Types of media the teachers engaged with during the training

TV, and video streaming was reported by an equal percentage of those surveyed, 10.5%. Smartphones and newspapers were reported by 18.4% and 36.8% of respondents, respectively (see Figure 2).

Concerning the frequency of media integration in training, the results indicate that slightly more than half of the respondents (54 %) reported engaging with media “more than 5 times”, while a smaller percentage (8.1%) reported “1 time”. 29.7% of the respondents mentioned that they were engaged with media “2-3 times” and 5.4% “4-5 times”. Notably, only 2.7% of the respondents reported “never” integrating media during the seminar.

Integration of Critical media literacy into Instructional Practice

This section presents the results of integrating media analysis and critical media literacy concepts into teaching practices during the training.

Media analysis

We examine how often the teachers had the opportunity to engage in media analysis. Just over a third (31.6%) of the respondents reported doing so “more than 5 times”. 18.4% of them reported “4-5 times”, 34.2% “2-3 times” and 10.5% “1 time”. Only a small percentage (5.3%) of the teachers surveyed said that they had never engaged in media analysis. Although media analysis was integrated into the training, it is unclear what types of media analysis the teachers engaged in.

Figure 3 visualizes the discrepancy between the frequency of teaching with media and engaging with media analysis. While the highest frequency reported for media analysis was “2-3 times” (34.2%), for media integration it was for “more than 5 times” (54%). The figure illustrates that there was a significant difference between the two when they occurred “more than 5 times” and “4-5 times”. Additionally, the figure demonstrates that there was no significant difference in the frequencies when they occurred “2-3 times”, “1 times” and “never”.

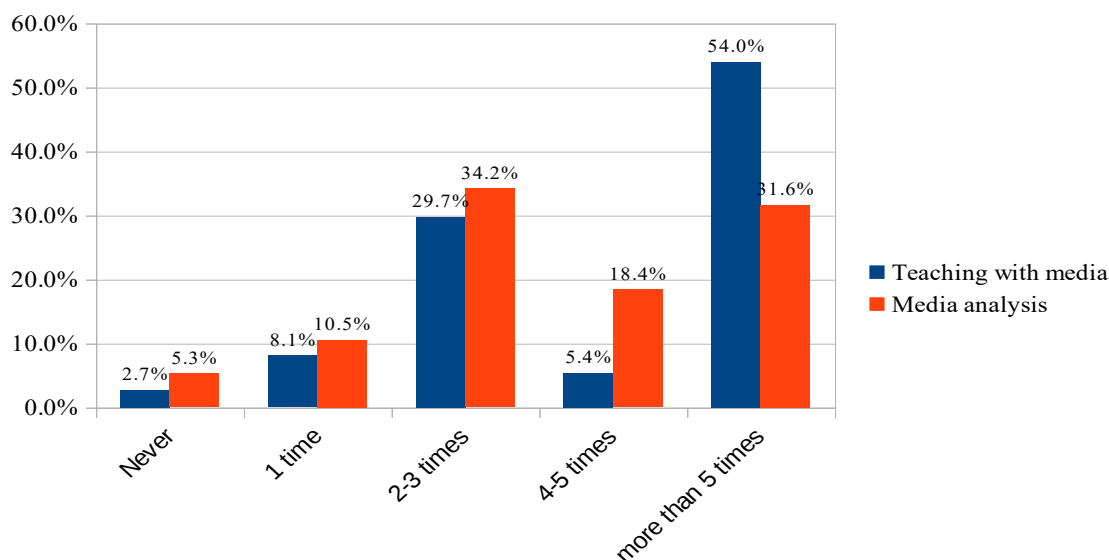


Figure 3: Comparing the frequency of media analysis with teaching with media

Ideology critique and analysis of bias

To determine the extent to which media analysis includes critical aspects of media literacy, we asked the respondents about their involvement in analyzing bias and critiquing different ideologies (e.g., racism, classism, sexism, religion, and consumerism) in media representations. The results show that analysis of bias occurred most commonly “2-3 times”, as reported by just over half of the respondents (54%). This was followed by “4-5 times” (16.2 %), “1 time” and “more than 5 times” with the same percentage (13.5%). A small percentage (2.7 %) reported never having had the opportunity to engage in such analysis.

In terms of ideology critique, the data indicate that the highest rate of engagement was “1 time”, while a smaller percentage (5.7%) mentioned that they had never participated in this type of critique. 31.4% of the respondents reported critiquing different ideologies “2-3 times”, followed by 20 % for “4-5 times” , and 5.7 % for “more than 5 times”.

Since ideology critique is the central component of critical media literacy, Figure 4 visualizes the comparison of the frequency of engagement with media analysis and critique of different ideologies. The figure illustrates a large difference between them when it comes to “1 time” and “more than 5 times” occurrence. While 10.5% of the respondents reported having engaged in media analysis “1 time”, 37.1% reported engaging in ideology criticism

for the same frequency. Significant differences also emerged in the frequency of media analysis (31.6%) and ideology criticism (5.7%) occurring “more than 5 times”. In addition, while the highest occurrence of media analysis was “2-3 times” (34.2%), for ideology criticism it was “1 time” (37.1%). The “never” response was reported quite the same for both, 5.7% and 5.3%, respectively.

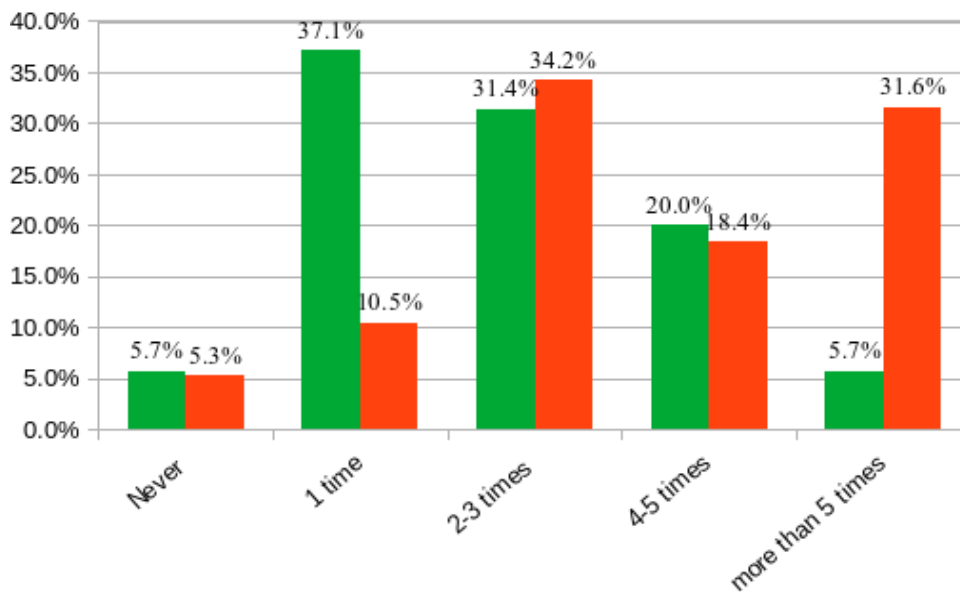


Figure 4: Comparison of the occurrence of ideology critique and media analysis

Three major differences emerged when comparing teaching with media and questioning different ideologies in media representation (see Figure 5). The more media integration that has occurred (54% “more than 5 times”), the less ideology criticism was reported (5.7% “more than 5 times”). Additionally, the frequency of ideology criticism at “1 time” and “4-5 times” (37.1% and 20%, respectively) is much higher than for teaching with media (8.1% and 5.4%, respectively). Furthermore, the highest frequency of ideology criticism was “1 time” (37.1%), whereas for teaching with media, it was “more than 5 times” (54%).

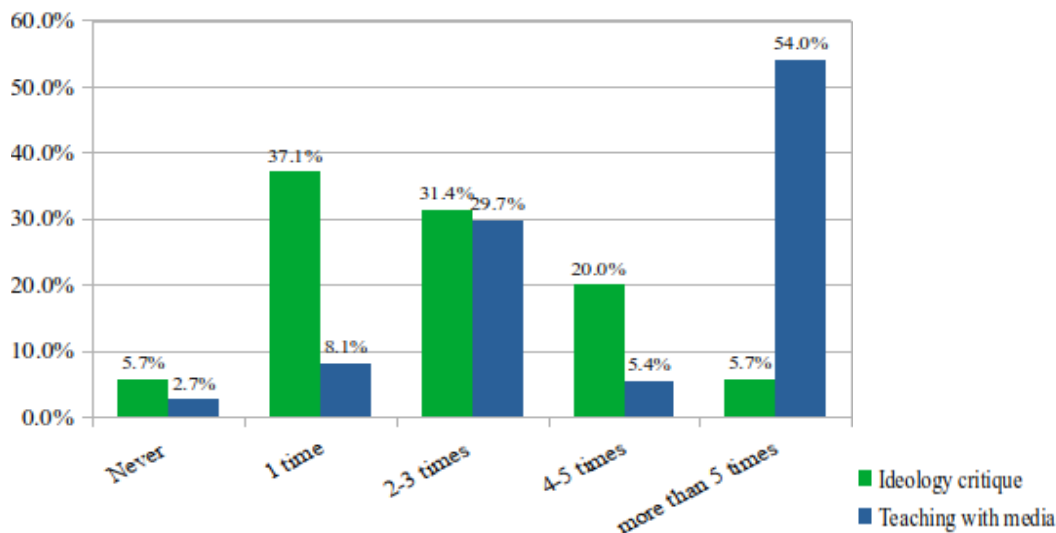


Figure 5: Comparison of the frequency of ideology critique and teaching with media

Social constructivism

The first core concept of critical media literacy is the construction of media texts and the choices and decisions made during the production process. Regarding this concept, respondents were asked about their level of engagement with the individuals and decisions involved in creating media texts (film, newspaper article, documentary, social media post, YouTube video, game,...). The highest frequency of involvement was “2-3 times”,

reported by 40.5% of respondents. The lowest levels of involvement were “1 time”, “never”, and “more than 5 times” with identical percentages of 13.5%. 18.9% reported 4-5 times.

Media languages and techniques

Regarding the acquisition of skills to analyze media languages and techniques, the results show that 45.9% of surveyed teachers learned “some”, while 10.8% indicated that they learned “none”. 18.9% said they acquired “many” and 14.3% reported they learned a “few”. The types of media languages and techniques covered in the training are unclear.

Production/Institutions

For the concept of *production/institutions*, we examined three key aspects: the aims of media productions, the types of media organizations in Austria, and awareness of the use of personal data for marketing purposes.

Regarding how often they analyzed the purposes of media productions, the most common response was “2-3 times” (37.8%), followed by 4-5 times (24.3%). Notably, none of the surveyed teachers (0%) reported “never” engaging in such an activity. Additionally, an equal percentage of respondents (18.9 %) reported engaging in this analysis “1 time” and “more than 5 times”.

Regarding the different types of media organizations in Austria, the results reveal that 86.5% of the respondents acknowledged their understanding of the differences between state, commercial, citizen, and public media, while 10.8% reported a “partial” understanding and 2.7% indicated that they did not learn about it.

When it comes to understanding the media system in which users’ personal information is sold to advertisers, 51% of surveyed teachers indicated that they learned about this issue during their training. Only 2.7 % mentioned becoming aware of it at all. 45.9 % of respondents said they had a “partial” understanding of the issue.

Social and environmental justice

The concept of social and environmental justice emphasizes the impact of media representation on different social groups, such as those defined by gender, race, and class. The findings show that 54% of respondents acknowledged gaining insight into how media representation can advantage or disadvantage certain groups based on factors such as gender, race, class, and religion. 45.9% of respondents indicated that they had learned somewhat about these issues, and none (0%) indicated that they had not learned about them.

As climate change becomes one of the biggest crises facing the planet, Kellner and Share (2019) suggest addressing and challenging the issue through the lens of critical media literacy. This approach involves critically analyzing how the media represents climate change and how this representation shapes norms and people’s actions regarding climate change (Share & Beach, 2022). In this regard, 56.8% of respondents reported not doing any activities analyzing climate change and environmental issues in media representation. 29.7% and 13.5 % of respondents mentioned “partly” and “fully” acquiring knowledge, respectively.

Algorithmic awareness

Since algorithm-driven media shapes our perception of the world through the selection, prioritization, categorization, and presentation of information and communication (Dogruel, 2021), we examined the student teachers’ engagement with algorithms and their critical awareness of them. Regarding this issue, 40.5% of the surveyed teachers reported that they were not involved in formulating an algorithm, while the same percentage (29.7%), mentioned that they had formulated or partially formulated an algorithm during training. Regarding the frequency with which they analyzed algorithmic bias, “1 time” and “2-3 times” occurred with the highest rate, 40.5%. “More than 5 times” was reported by only 2.7% of the respondents. “Never” and “4-5 times” engagement in analyzing algorithmic bias was reported with an identical percentage of respondents (8.1%).

The highest frequency for criticizing ideology of algorithms was “2-3 times” (51.3%), while the lowest frequency was “more than 5 times” (2.7%). 32.4% of respondents reported engaging in criticism of ideology in algorithms “1 time”, and 8.1% reported doing so “4-5 times”. Only a few respondents (5.4 %) reported that they had never engaged in such activities.

Analyzing the respondents’ understanding of the impact of algorithms in digital media on personal lives and political, social, and economic structures shows that 45.9 % of surveyed teachers reported learning about these impacts, while 43.2% indicated partial understanding. Only a small percentage (10.8%) stated that they had not gained any knowledge regarding this issue.

Media creation

One of the central elements of critical media literacy is media creation. In this regard, just over half of the respondents (56.7%) indicated that they had created media “2-3 times”. Only 2.7% noted that they had never created a media text. Creating media “4-5 times” in training was reported by 18.9% of surveyed teachers, “1 time” by 13.5%, and “more than 5 times” by 8.1%.

The types of media created in training were reported as follows: podcasts (89.4%), videos (84.2%), and other types of media (photo, book, newspaper, magazine, digital story, game, cartoon, animation, and advertisement) with an identical frequency (10.5%) (see Figure 6).

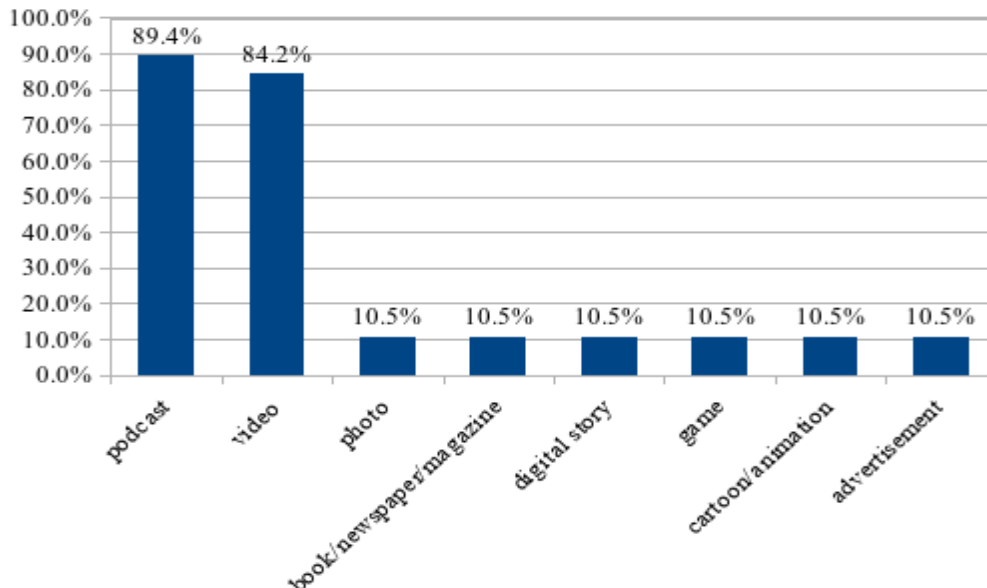


Figure 6: Types of media created by teachers in training

Teachers’ perspectives on media education

To determine whether there were any changes in teachers’ views on media education and media literacy, we asked one closed-ended question and three open-ended questions before and after the training.

Reason to teach Media Literacy

Quantitative data shows that the most important reason for teaching media literacy to children was developing critical thinking skills (89.5%), while preparing children for the labor market was the least important reason (39.5%). A significant number of respondents (76.3%) cited protecting children from negative influences as the second most important reason, followed by helping children become active citizens in a just and democratic society (57.9%). Just over half of the surveyed teachers (55.3%) cited teaching the correct use of media as a reason for media literacy education (see Figure 7).

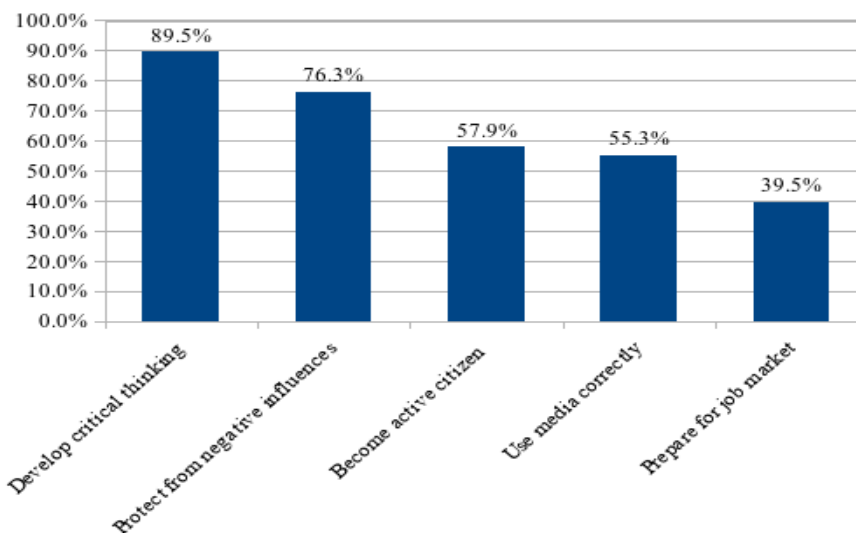


Figure 7: Reasons to teach Media Literacy

Qualitative data from 57 respondents before the training show that the main reasons for teaching media literacy to children were “protection” and “media ubiquity”, followed by “critical thinking” and “media use”. After the training (36 respondents), these themes shifted slightly. “Protection” and “critical thinking” became the main themes, followed by “media ubiquity” and “media use”. However, the meaning of the term “critical” is unclear.

Elements of media literacy

60 participants about the components of media literacy before the training, and 37 responded after. After coding and categorizing the data, it was revealed that “media use” was the first theme, followed by “protection” and “critical thinking”. Data analysis after the training showed different results, with “critical thinking” and “protection” emerging as equally important themes, followed by “media use”. Two additional themes emerged from the data after the training that were not present beforehand: “media knowledge” and “media creation”. However, these themes were less important than the main themes.

Understanding of media education

51 participating teachers responded to the open-ended question about their understanding of media education. The data revealed that “critical thinking” was the primary theme in their understanding of media education, followed by “protection” and “media use”. After the training, 33 respondents demonstrated the same three main themes. However, two new themes emerged: “creativity” and “media knowledge”.

It is important to recognize that, although critical thinking is an aspect of their perspective, their views of media literacy elements and understanding of media education do not include a critique of different ideologies and biases in media representation.

Challenge and success

23 of the 38 participating teachers responded to an open-ended question about the challenges they encountered during training. Open coding of the qualitative data revealed that the first identified theme was “lack of challenge” in the training. Another significant theme was “complication”, such as theory-heavy and complex content, as well as ambiguous assignments. Some respondents mentioned “technical issues”, particularly those related to creating media such as podcasts and videos. Additionally, a few respondents cited “time management” and a lack of motivation and interest as challenges they faced during the course.

27 out of the 38 surveyed teachers responded to an open-ended question about the benefits they gained from the training. “Creation” was significantly prominent among the benefits they identified. There were two sub-themes under creation: “Lesson plan creation” and “media creation”. Teachers designed different lesson plans for different subjects and created media, such as podcasts and videos. The next theme was “gaining new insight” about media and digital education. Another theme focused on “media use” and included learning to use Moodle and becoming familiar with different types of media.

6. Discussion

This research aimed to explore the integration of critical media literacy into the teaching practices of a teacher training course in media education entitled *Didactics of Digital Basic Education* (Fachdidaktik Digitale Grundbildung), at the Center for Teacher Education at the University of Vienna in Austria. A post-training survey completed by 38 trainees revealed that the primary competency acquired by the student teachers was media reflection skills (81.6%). These significant findings highlight that, unlike many teacher trainings in media education that prioritize technical skills and the use of and new technologies (Gretter & Yadav, 2018; Salomaa, Palsa, & Malinen, 2017; Tiede & Grafe, 2016; Tiede, Grafe, & Hobbs, 2015; Swertz, 2015), this training emphasized teaching about media more than teaching through media and focused least on developing technical skills (21%). Other data also support this conclusion, showing a moderate frequency of teaching with media in teaching practices (54% of respondents reported doing so more than 5 times) with a significant engagement with new media, such as social media (81.6%) and the internet (68.4%), in instructional practices.

Another significant finding is that, in contrast to many media literacy programs that focus on protecting children from the dangers and negative effects of media, especially the Internet, this training adequately addressed these issues without making them central. The results demonstrate that 44.7% of participants acquired competence in dealing with the dangers of the Internet.

Regarding the integration of critical media literacy dimensions into teaching practices, the results are striking. They show that most aspects of critical media literacy were incorporated into the training, though the degree of integration varied. In fact, very few respondents indicated that critical media literacy was not addressed in the training. The data also showed that media analysis was integrated into the training, as only a small percentage of respondents (5.3%) reported never engaging in media analysis, while a significant majority (84.2%) reported doing so at least 2-3 times.

The first core concept of critical media literacy is social constructivism, which involves the decisions and choices made by producers. It is an important starting point for critical inquiry. It illuminates the fact that media are not neutral conveyors of information. It also challenges the power of media to present messages as unproblematic and transparent, as these messages are influenced by the biases inherent in the decisions and choices made by media producers (Kellner & Share, 2007). In this regard, the results show that trainees engaged with the people and decisions that contributed to the creation of a media text as only 13.5% reported never engaging with the decisions and choices made by producers and 72.9% engaged with them at least 2-3 times.

Media texts use a variety of languages, including visual and auditory elements, and a variety of techniques to convey meaning and messages. Therefore, analyzing and recognizing these components is an important aspect of media literacy. By examining the language and techniques used in media texts, students can gain insight into how these elements shape different interpretations of a message. This understanding not only reduces the influence of media manipulation, but also increases their appreciation and enjoyment of media as a constructed texts (Share, Thoman, 2005). Against this background, the findings reveal that more than half of the surveyed teachers (64.8%) learned at least some elements of media language, while only a small number (10.8%) did not learn about it in the seminar. However, the specifics of the media language and techniques they were engaged during the training remain unclear, as the data do not provide insight into the specific types learned.

A promising result was found regarding the incorporation of the analysis of bias and ideology critique, which is the main component of critical media literacy (Hammer, 2009). Very few of the surveyed participants reported never having analyzed bias in media texts (2.7%) and analyzing different ideologies (5.7%).

In addition, the majority of the respondents (83.7%) indicated that they had analyzed bias in media at least 2-3 times. More than half of the surveyed teachers (57%) reported this level of engagement with ideology critique.

Understanding why a media message is being sent is important because it provides context for interpretation and clues for how to respond (Share & Thomas, 2005, p. 69). Notably, the findings demonstrate that respondents often analyzed the aims of media texts, as evidenced by the fact that the majority (81%) reported doing so more than 2-3 times, and none mentioned never doing so.

Furthermore, the understanding of media system also can empower students to analyze the purposes of media messages, which are shaped by the systems in which they operate. The results indicate that a significant number of trainees (86.5%) have become familiar with the difference between the various types of media in Austria, including state, commercial, citizen, and public media. This could enable them to critically analyze media production and its aims.

Moreover, it is essential for students to recognize how their personal data, activities, and behaviors on digital media are collected by media corporations within the contemporary media system. As Zuboff points out “these data are then computed and packaged as prediction products and sold into behavioral futures markets -business customers with a commercial interest in knowing what we will do now, soon, and later” (Laidler, 2019). In light of

this fact, the data show that more than half of the respondents (53.1%) learned about these issues, while only a small percentage (2.7%) did not learn anything about them.

As students apply a critical media literacy lens to their engagement with all types of media, it is important that they focus on social and environmental justice, as these two are intricately linked to civic responsibility (Share & McBride, 2022, p. 169). Notably, none of the respondents reported learning nothing about how media representation can advantage or disadvantage groups based on gender, race, class, etc. Half of the respondents (54%) indicated that they have learned about this issue.

When it comes to environmental issues, “even as media images have made the environmental crisis visible to a mass public, they have often masked systemic causes and ignored structural inequalities” (Dunaway, 2015 p.2). Therefore, cultivating critical media literacy is essential to enable students to critically analyze media and dominant ideologies, including unregulated capitalism, over-consumption, fossil fuel dependency, and human exploitation of nature, while empowering them to use new media and technologies to develop solutions (Share, 2020). However, the results show that only a small fraction of teachers surveyed (13.5%) have engaged with the media representation of climate change, while over half (56.8%) have not received any education on the issue.

Although algorithms are not a new phenomenon, the rise of artificial intelligence, driven by the integration of large data sets, enhanced computational resources, and cutting-edge algorithms, has brought them to the forefront as a major human rights issue in the 21st century (Ridley & Pawlick-Potts, 2021). This has made “algorithm awareness a matter of agency, public life, and democracy” (Gran et al., 2021, p. 1). In light of this, the findings reveal that a significant proportion of the teachers surveyed (62.2%) have engaged in analyzing ideology of algorithms at least 2-3 times, while only a few respondents (5.4%) reported no engagement. Additionally, only 10.8% of those surveyed did not become aware of the impact of human-created algorithms on their personal, social, and political lives. However, less than half (45.9%) learned about the issue.

Media creation is a crucial aspect of critical media literacy, enabling students to actively engage with media rather than merely critique it. As Bigelow (1995) noted, “If we ask children to critique the world but then fail to encourage them to act, our classrooms can degenerate into factories of cynicism” (p. 5). Data indicate that creating media was one of the most important skills learned in the training, as reported by 71% of respondents. The creation of media texts at least 2-3 times was reported by 82.7% of respondents, especially podcasts and videos. Creating these types of media requires many skills, including the use of different media languages and techniques, such as sound, music, and editing.

It is not surprising, then, that creation was the main benefit they gained from the training. They created many lesson plans for different topics of the course, as well as media, especially podcasts and videos. In addition to creation, they gained new insights about media and digital education. Another notable finding was the lack of challenges in the training, which many mentioned. The most significant challenge for participants was the complexity of some of the content and tasks.

Other noteworthy findings indicate a slight change in teachers’ views on media literacy and education following the training. A comparison of the pre/post-survey data reveals a shift toward critical thinking, as well as the emergence of creativity and media literacy as new themes. However, we cannot definitively determine these changes due to differences in the number of respondents before and after the training regarding their views on media education. Nevertheless, incorporating critical media literacy into instructional practices and gaining new insights into media education could support the finding of changes in their approaches. These findings confirm previous research by Botturi (2019), who found a shift in teachers’ perspectives from a protectionist stance to a more critical approach after attending a course on media and digital literacy.

It is important to note that ideology critique, the central element of critical media literacy, was not reflected in their approach to media literacy at any stage, either before or after the training. This could be a consequence of not developing sufficient ability to analyze different ideologies as only 34.2% of the respondents reported gaining this competency in the course.

Additionally, engagement with many dimensions of critical media literacy, especially ideology critique, was less frequent than teaching with media. While 54% of the surveyed trainees reported using media in their teaching more than 5 times, only 5.7% reported criticizing ideology that many times. Similar results were found for other aspects, such as media analysis and analyzing bias.

A comparison of engagement in media creation and ideology critique reveals a gap. While there is a slight discrepancy in occurrences of more than five times (5.7% and 8.1%), the results show that engagement with ideology critique was less frequent than engagement with media creation. More than half of the surveyed teachers (57.1%) reported engaging with ideology critique at least 2-3 times, compared to 82.7% who reported engaging with media creation at least 2-3 times. Furthermore, just over a third (34.2%) reported acquiring the ability to critique ideologies in media representation, while the majority (71%) reported acquiring the ability to create

media. Although incorporating media creation and production into educational frameworks makes learning more experiential, practical, creative, expressive, and enjoyable, a dynamic relationship between the critical and creative elements of media literacy is necessary (Clement & Buckingham, 2019).

7. Conclusion

Teachers play a crucial role in cultivating critical media literacy among students in schools. The Center for Teacher Education at the University of Vienna offers training to prepare teachers to provide digital basic education (Digital Grundbildung) in schools.

An evaluation of the training using Kellner and Share's critical media literacy framework demonstrates positive and promising results. Critical reflection was the primary outcome, followed by media creation. Along with integrating media into teaching practice, the training incorporated teaching about media by implementing many critical aspects of critical media literacy, albeit to varying degrees. Unlike many teacher training programs that focus on a protectionist approach to teaching media literacy, this training adequately addressed the importance of protecting students from risk without making it the central issue.

Practicing critical media literacy, especially the critical dimensions, in teacher training and schools is challenging and more complex than it seems. This study shows promising results regarding the integration of critical media literacy into teacher training programs. It demonstrates that even a short-term critical media literacy training can change teachers' attitudes and perspectives on media education and literacy.

While the training successfully integrated critical media literacy into teacher training, further development and improvement are needed to emphasize ideology critique, bias, and environmental justice more. This study has the potential to provide critical media educators with valuable insights on incorporating critical media literacy into teacher education programs, particularly in Austria.

This study has several shortcomings. First, the small number of participants who completed the survey limits the generalization of the findings and affects the depth of understanding of the integration of critical media literacy in teacher training. Additionally, collecting data through a survey is not an adequate method for evaluating the integration of critical media literacy in teacher training. Observing teacher training in media education and conducting interviews with teachers could provide more insight. Future studies that collect data through observation and interviews are recommended.

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