
Media Literacy among Teacher Trainees in Debre Markos University: Implications for Media Education and Teacher Training¹

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Abstract: With the role and importance of media increasing globally and in transitional countries like Ethiopia in particular, media literacy has become markedly important in view of the problematic information environment and the dire consequences that have become apparent. The objective of the present mixed methods study was to determine the level of media literacy among secondary teacher trainees in Debre Markos University using a pretested version of the Media Literacy Scale designed for and used in pedagogical contexts. In addition, the aim was to explain the relationship between biographical factors and media literacy. Sampling decision was based on Green's guidelines of power and a usable sample of 166 students from the Colleges of Social Sciences and Humanities, and Natural and Computational Sciences. By using descriptive, correlational and ANOVA designs, the study established the weights of the literacy factors, correlations as well as group differences. Results show that 4% had below basic, 9.4% basic, 37.3% intermediate and 48.8% proficient level media literacy. Limitations of the study are indicated and further directions are outlined.

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Background

Years after television became mainstream media Postman (1985, P. 231) warned that *TV has attained the power to control education because it dominates the attention, time, and cognitive habits of the youth*. According to Hammer (2011) there are startling observations. Thus, studies have shown that *a huge majority of our population in the United States stops reading books after high school graduation [and] still more after they receive undergraduate degrees* (Hooks, 2010: 130). They find this as being no source of surprise considering the hegemonic status enjoyed by the media as an 'educational entity'. Additional concerns raised are that literacy has decreased among college graduates and college students 18-24 of years now spend 'an average of 11 hours a day involved in some sort of media or digital communications' (Rideout et al, 2005). This makes the media a force to reckon with for good or bad.

More recently Wineburg and McGrew (2017) have observed that the digital world has opened unprecedented opportunities for access to information and learning but the massive opportunities have brought the dark side of misinformation, disinformation, and sheer propaganda that can be extremely dangerous especially in fragile and divided communities. While the mind-control intentions enabled by technology abuse are widespread it becomes all the more important to develop defensive faculties of "active inquiry and critical thinking about the messages we receive and create" (Hobbs & Jensen, 2009). In other words we need more than ever before "the ability to access, analyze, evaluate, create, and act using all forms of communication." (Livingstone 2004, P.1).

The new millennium has in particular brought with it a new challenge to schools, students and teachers- the need for a re-conceptualization of learning and a revision of roles of all involved in the knowledge business. The proliferation of media and media technologies and the

often-unmanageable quantities of information they churn out is a new challenge to all but especially to teachers and students (Bulger & Davison 2018). With more expansion in education and knowledge production, the idea of knowledge and information explosion is no longer a futuristic projection but a present and pressing challenge that need to be addressed adequately and continuously. Among the range of possible actions is the development of media and information literacy as well as skills to help teachers and students cope with and stay afloat in the overwhelming information and media environment. Teachers need the skills not only to adequately tap information resources but at the same time to avoid information anxieties that attend the knowledge industry (There are now frequent references to information overload as a serious dysfunctional problem). Aside from information literacy teachers also need a number of literacies including allied media skills to access, analyze, evaluate and communicate messages in a variety of forms.

With media literacy, schools and teachers can promote an informed citizen with critical thinking skills - a citizen who can understand the complex issues facing their society, and resist negative media influences. Media literacy goes a long way in creating healthy schools today and healthy citizens tomorrow. In this crucial undertaking the teacher and his media literacy are doubtless in the center as they are pivotal tools to empower people in all walks of life to use information and media effectively² to achieve their personal, social, occupational and educational goals (Horton 1996). Flores-Koulish (2006, p.239) aptly states that "Pre-service teachers (PSTs) have to face two challenges: they themselves must become critical and, at the same time, they need to learn how to deepen their future students' 'criticality amid the accountability dynasty'.

² In July 2018, following the circulation of fake news the university town of Debare Markos experienced massive violence and destruction which was feared could harm the town as a rising hub of trade and investment.

Research shows even younger teachers are substantially deficient in media skills. Media literacy has not been offered adequately in their initial or in-service education (Scull & Kupersmidt, 2011). This training gap creates a discrepancy between the media literacy that new teachers need in their profession and their actual experiences of teacher training (Lund, Furberg, Bakken & Engelién, 2014). But there is far more to this than is apparent. Kellner and Share (2006) have proposed *...a model for radical democracy that promotes independence and interdependence but moves away from an uncritical dependency on media...Radical democracy depends on individuals caring about each other, involved in social issues, and working together to build a more egalitarian less oppressive society*. Calls have also addressed the need for “a pedagogy of multiliteracies” and “transformative pedagogy” that truly empower students and societies (Robertson & Scheidler-Benns 2016).

Archives of curriculum manuals indicate that although it did not constitute a core curriculum, instructional media coursework centering on aspects of media technology literacy was offered in the 80s and 90s principally in Addis Ababa University and there were a few attempts to address instructional technology that included Amare (1996), Amare and Tassew (1996), Gebreegziabher (1998) , and Teshome (1998). Much has taken place since these studies were reported.

While this paper acknowledges that important curricular legacy, equally importantly it hopes to reignite and broaden pedagogical and scholarly conversation and debate leading to curricular and policy action in the study region as well as more comprehensively in the Ethiopian federation in the area of media literacy which has unfolded in response to the remarkable and unprecedented technological, social and historical changes. Despite the dire needs of the relevant contexts, no previous studies have attempted to address the conception of media literacy as it relates to teachers and pedagogical settings. However, UNSCO and other actors have emphasized the role of media literacy

and called on countries to embrace media literacy in educational institutions within the global organizations policy and strategy guidelines (Grizzle et al 2014).

Definitions

Media literacy refers to the “ability to access, analyse and evaluate the power of images, sounds, and messages which we are now being confronted with on a daily basis and which are an important part of our contemporary culture; as well as to communicate competently using available media, on a personal basis” (Manalili & Rehnberg 2008, p.3).

Media education relates to the pedagogical processes of imparting knowledge and skills about media leading to media literacy (Buckingham, 2003).

Information Communication Technology (ICT) generically includes any communication device or application, encompassing radio, television, cellular phones, computer network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. (TechTarget, 2016, p. 1).

Literature Review

Theoretical and Empirical considerations

According to Veniers and Tilleul (2014, p.6-7) there are key theoretical conceptions guiding media literacy which include frameworks from systems in Finland, Belgium and France. The Finnish perspective is anchored in the idea of *participation, creativity, active citizenship and social agency*. The use of media *critically, responsibly, creatively, independently and in a socialized way in the contemporary media environment* is the core philosophy in the Belgian framework. Most

meticulously the French framework underscores the competency in terms of Media and Information Literacy (which UNESCO has embraced) as a set of media, information and digital literacies *allowing pupils to exercise their citizenship in the information and communication society; educating tomorrow's active, informed, and responsible cybercitizens; enabling the understanding and the autonomous use of media by pupils and teachers, who are readers, producers, and broadcaster of contents all at one* (Verniers and Tilleul 2014, p.7)). The UNESCO conception is considerably broad as reflected in the definition: *Media and Information Literacy (MIL) brings together the three distinct dimensions of Information Literacy, Media Literacy, and ICT or Digital Literacy. Acting as an umbrella concept, it is a new literacy construct that helps empower people, communities and nations to participate in and contribute to global knowledge societies* (UNESCO, 2013, p. 158). However, despite appearing different, the literacies essentially convergently relate to *competencies that emphasize the development of enquiry-based skills and the ability to engage meaningfully with media and information channels in whatever form and technologies they are using* (UNESCO, 2011, p.18). The distinction between media literacy and UNESCO's Media and Information literacy is one of definitional breadth but in essence the two concepts are the same.

While diverse conceptualizations relevantly focus on liberatory powers for the learner and his/her safe navigation of informational resources, the present study is guided in particular by inoculation theory which has received renewed attention as an explanatory framework for interventions designed to prevent undue influences. It is a metaphoric application of inoculation practices in the medical field that has led to significant gains in disease control (Compton, 2013). Inoculation theory has been applied to diverse fields including most relevantly politics, propaganda studies, religion, marketing and education (Compton & Ivanov, 2013; Compton, 2011) and is generally sufficiently validated (Duryea 1983; Miller et al., 2013).

The basic tenet of the theory is that refutational preemption capacity is developed in subjects if they are adequately prepared to counterargue against incoming persuasive message that may sway them in the direction of the persuader. In both cognitive and attitudinal angles inoculation can take place that proves contrary positions are spurned and pre-exposure positions are sustained. Inoculation theory has particular relevance to media literacy education as literacy comes a long way to help how unhealthy messages are received or considered credible. An early awareness is established that there are manipulative disinformation and misinformation strategies and practices in abundance digitally and offline. This alertness is a response to a recognition of threat as an important first step according to the tenets of the theory. The sequel is what has been called 'refutational preemption' or simply advance warning resulting in resistance to contrary messages or attempt at manipulation. In media literacy education the resistance comes in the form of rejection of digital fake news or other forms of malicious communication due to the inoculation (Compton and Ivanov 2012). Cognitive skills help in analytical reception of messages and rejection of falsehoods (Pfau, 1997). Delay as the third factor in inoculation pertains to the issue of optimally effectual temporal distance between inoculation experience and exposure to counter-attitudinal or misinformation assaults. While this factor has drawn no consensus there is agreement that inoculation is far better than no inoculation.

Involvement has been studied as the last dimension of the inoculative process. Involvement defined as *the importance or salience of an attitude object for a receiver* (Pfau, et al. 1997 p. 190) relates to the weight attached to the threat which determines the degree of resistance in subsequent periods to threats for instance coming in the form of online deceptive or exploitative communication that can have serious consequences for the target. However while active memory may be more effectual, it is generally recommended that media literacy education should be a life time project that is offered to children, adolescents, adults even the elderly so it remains a potent force against new and changing forms of online communications with

adverse intentions and consequences. Relevantly studies have addressed the demographic terrain. Thus in regard to infancy and childhood media literacy is designed to address the child's safety, developmental needs and self-expressive needs (Finnish Ministry of Education and Culture, 2013) and in later years in old age social issues as well as medical information needs may be important media literacy considerations (Martin, & Gow, 2017 ; Xie, 2011).

Fedora and Levitskaya (2018) have argued that media literacy is made prominently necessary as recommendations by global bodies would unambiguously indicate. Thus, the Moscow Declaration on Media and Information Literacy developed by UNESCO Information for ALL Programme (2012) underscores the urgency of inclusion of media literacy as a strategic priority in education and culture and media spheres as well as the curriculum across the board. Indeed, media literacy is one of the most important literacies necessary for the new media and information age. It has a generic dimension of being able to understand the nature of media, its goals, functions, techniques, and tools. It relates to being a critical consumer who can analyze the intentions, hidden meanings, of mediated communications. It underpins critically evaluating all media messages and genres that include news, films, entertainment, advertisement, sports, that may have a commercial or political or ideological agenda and refusing to be swayed. It also relates to being able to question and resist undue influences and pressures by institutions that have anterior motives. It thus accentuates the ability to take a balanced perspective that is able to see frames, values, and subtle intentions or misinformation or disinformation.

But it is not limited to critical receptive competencies in aural, visual, perusal experiences. Instead it addresses further expressive capabilities and skills in the matter of old media production such as writing and publishing, it also includes skills in web competencies that the modern citizen needs for unhindered self-expression on digital

platforms.

The definition of media literacy outlined suggests that the traditional literacies of reading, writing and mathematics are no longer sufficient for the changed and complex literacy demands of the information society of the glorious 21st century. The changing demands include those of societies in Africa where media and information context are transforming in complex ways. In essence media literacy has a significant technological component. According to Wilhelm (2000), technology is central to literacy and the ability to use state-of-the art technologies is a core component of literacy... In fact, a new synonym - electracy- has been coined to refer to media literacy. Bolter's statement *that if our students are not reading and composing with various electronic technologies, then they are illiterate. They are not just unprepared for the future; they are illiterate right now, in our current time and context* (Wilhelm, 2000, p. 4) appears to lend credence to the new conceptualization of MIL which is virtually synonymous to media literacy.

Like media literacy, media and information literacy is a multidimensional construct with cognitive, active, moral, social, emotional and aesthetic dimensions (Aufenanger 2003), but seems to reflect the more sophisticated media and information ecologies in advanced countries. This sophistication is reflected in the definitional scope as well as the numerous competencies required to competently deconstruct the media as a complex institution. The pedagogical dimension is also in tune with the complexity underscoring the requisite training to disentangle the media as an intricate sociopolitical institution.

The theoretical conceptions regarding media literacy and media education goals are extremely diverse and the international literature is vast often bearing national contexts (see Verniers and Tilleul (2014) for a full picture). This diversity is reflected in 'a competences framework of 92 competences' that dimensionally addresses four categories: *media education competences, media literacy competences and media*

meta-competences proposed by different European educators (Verniers and Tilleul 2014, p.22).

As the European experience shows, media literacy education is contextualized in national historical, social and political ecologies. The literature on teacher preparation in media literacy shows diverse elements of national education systems, the role of media education in the educational systems, organization of training, competencies frameworks, certification regimes, and in service-training systems. In the United Kingdom, for instance, the teaching of media literacy lies between *the instrumental use of knowledge about the media (how to access it, read it, understand it and produce it) and, on the other hand, its place as a subject of study in its own right as a meaning-making system in lived culture with its own rules, grammar, values and potential for creative activity* (Verniers & Tilleul 2014, p.7).

While media literacy is in its infancy in Africa, African countries need anticipatory preparation in the matter of equipping teachers with the latest skills. In consequence, in teacher preparation ecologies, a broad conceptualization of media literacy, not just as a set of competencies and skills but as a methodological knowledge and ability to meet change, should guide continuous professional development. According to Carr (1998) there is a recognition that learning how to learn is fundamental to economic and personal success in the information age. The ability to learn how to learn is a key characteristic of those who are information literate; i.e., those who *know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them* (Presidential Committee on Information Literacy, 1989). If teachers are to use information so that others can learn from them, then they must be information literate. While the literature on media literacy is extensive as the nearly 200 studies reviewed by Martens (2010) show, the African and Ethiopian higher education landscape is virtually un-addressed. Thus, studies that interrogate media literacy in

university contexts are needed.

This study is aimed at (a) determining the general level of media literacy among teachers; establishing media literacy levels among teachers as per norms; comparing media literacy levels among teachers based on gender as a category; exploring trainee perspectives of contextual relevance of media literacy; and coming up with a set of recommendations for action.

This study makes several contributions to the literature. Firstly, it is probably the first Ethiopian study to investigate the state of media literacy as it relates to the higher education sector. Secondly, the paper adds to the growing body of media literacy studies in the context of developing economies as they are exposed to and vulnerably impacted by a broad variety of shocks. Thirdly, it contributes by exploring a litany of factors that were not considered in previous studies including personal competence, pedagogical-didactic, and medial contribution. The study provides new insights into the perceived role of media literacy and the state of relevant literacy among secondary teachers in a regional state that is being progressively exposed to mounting media content much like other states in the Ethiopian federation. Finally, the study may be considered a trail blazer in the Ethiopian academic media terrain to look into media literacy among teachers in general and graduate trainee teachers in particular. Given Ethiopia's dire circumstances and the contested role of the media, the present research becomes even more important as an issue that draws official interest and global support from bodies such as UNESCO that are interested in media playing a constructive role in developing countries experiencing the onerous challenges of a transition.

Methodology

The media literacy study used a questionnaire survey as *a technique for gathering statistical information about the attributes, attitudes or actions of a population by administering standardized questions to some or all of its members* (Buckingham and Saunders, 2004, p. 13).

Although fundamentally quantitative, the cross-sectional study also had items for free expression of opinion.

Sampling

In line with expert opinion, the sampling strategy was based on the use of a large number of cases and indicators for each latent variable (Joreskog & Wold 1982). Sample power, which may be analyzed accurately using G*power 3.1.2 (Faul et al 2009), was a relevant consideration. Power analysis showed that in this study the power of the test is significant as the study used a fairly large data base of 166 random observations. The value of 0.97 (Cohen, 1988, p.56) which accords samples above 165 a high power is an indication that there is confidence in the generalizations of the study to relevant trainee teacher populations in the study institution.

Further, in the endeavor to enhance the validity of inferential outcomes a sampling protocol was developed that was designed to generate representative data. The population of interest being postgraduate trainee teachers at the study university, a sampling frame was developed based on a definition of the population. Then sampling techniques were employed that would meet the requirements of sampling efficiency and help to address the survey objectives. Thus, to reduce variance in sample statistics first it was necessary to employ stratification of the subjects into academic disciplines as these have their own characteristics. Once the strata denoting the natural and computational sciences and humanities and social sciences as subpopulations were identified as eligible, next was the use of a simple random sampling strategy to pick sections from each stratum.

In this way, based on the stratification, eight sections of social science and humanities out of 14 (120 students), and six sections of natural and computational sciences (90 students) out of 12 were selected and contacted using the hat and draw method *as a random sampling*

strategy. The total figures of contacted respondents were two hundred ten out of 375 students from both colleges with the typical section having 15 students.

Instrumentation

In order to understand the levels of media literacy among teachers, data was collected using a standard questionnaire used in similar studies around the world. Questionnaires were coded to assure confidentiality and verification was made of the return rate as well as the completeness of the information. Unusable data or data critically missing was discarded to assure data quality as input for the study. The necessary validation procedures to assure the questionnaire has acceptable validity and reliability levels was done before main study data gathering was carried out. Open-ended items on the questionnaire were handled using appropriate qualitative data management procedures to shed light on the quantitative data obtained from the close-ended items. It was expected that the qualitative data would serve to enrich the quantitative data by explaining any inconsistencies and contradictions or by strengthening expressed beliefs, views and attitudes of teachers. Data was collected during Kiremt 2011 and involved the assistance of doctoral students. The questionnaires were distributed, administered and returned on-the-spot in classrooms by research assistants. Although the objectives of the study and means of filling out the questionnaire were clearly explained in the directions on the questionnaire, the in-person modality was important to ensure the respondent could obtain appropriate support during and after completing the questionnaire.

Scale description

The teacher media literacy scale (available in English) was designed to understand teachers' media literacy levels. It had a total of 24 items clustered in three dimensions aimed at measuring

teachers' media literacy:

- Pedagogical-didactic competence items were nine (eg "I can help learners develop awareness own media behavior (e.g. copyright, illegal downloads, dangerous media behavior").
- *Personal competence* (n = 12) relating to competencies in the field of (critical) understanding of media that subsume analytical, evaluative and reflective skills and (eg "I know how media production and distribution works (e.g. from source to article, the filtering of news, the intersection between politics, media and democracy").
- *Contributing medially* (n = 3) which includes media creation and communication as well as medial participation (eg I can create media content - write an article, create a photo or video document, set up a blog). An internal consistency test produced an alpha .87 score which could be considered impressive (George and Mallery 2003). Thus the scale as employed in the study can be considered adequately reliable. It was also valid as construct intercorrelations were modest but significant demonstrating convergence validity.

The sub-dimensions of media literacy demonstrated positive and significant associations. Thus personal competence has significant associations with pedagogical competence ($r = -.752^{**}$, $p < .01$), with medial contribution ($r = .436$ $P < .01^{*}$), and global media literacy ($r = .919$ $P < .01$). Medial contribution was correlated with pedagogical competence ($r = .460$ $P < .01$). According to Ratner (2009), correlation values between 0.3 and 0.7 show a moderate positive linear relationship.

Using SmartPLS composite reliability was calculated at 0.71 for medial contribution, 0.86 for pedagogical-didactic competence and, 0.82 for personal competence (Ringle, Wende, & Becker, 2015). As reported by

the developers of the instrument, the formative validation was through and authoritative involving a large pool of over three thousand subjects.

Media literacy bands were developed based on the work of the developers as well as the broader literacy measurement literature (Hausee et al 2005). These levels are further described under Table 1.

Table 1: Media Literacy Bands

Level	Description
Below basic	Lower than average competencies in <ul style="list-style-type: none"> • the field of (critical) understanding of media, including analysis, evaluation and reflection on media content • the technical instrumental use of media • the creation and the communication of media messages as well as to participation using media
Basic	Basic competencies in <ul style="list-style-type: none"> • the field of (critical) understanding of media, including analysis, evaluation and reflection on media content. • the technical instrumental use of media • the creation and the communication of media messages as well as to participation using media
Intermediate	Above basic competencies in <ul style="list-style-type: none"> • the field of (critical) understanding of media, including analysis, evaluation and reflection on media content • the technical instrumental use of media • the creation and the communication of media messages as well as to participation using media
Proficient	Advanced competencies in <ul style="list-style-type: none"> • the field of (critical) understanding of media, including analysis, evaluation and reflection on media content • the technical instrumental use of media • the creation and the communication of media messages as well as to participation using media

Data Analysis

Data were analyzed using the latest version of SPSS (Statistical Package for Social Scientists) descriptively and inferentially which would give a picture of media literacy in relation to the variables of interest in the questionnaire. In addition to the descriptive statistics, there is also an analytical discussion of the multivariate associations viz. ANOVA procedures comparing subpopulations. Qualitative data were categorized and analysed thematically in relation to set research objectives.

Findings

The findings of the study are presented in sections below. In the first part profile of respondents is presented.

Tables 2 and 3 show the profile of the respondents.

Table 2: Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	121	72.9	72.9	72.9
	female	44	26.5	26.5	99.4
	11.00	1	.6	.6	100.0
	Total	166	100.0	100.0	

Table 3: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	98	59.0	59.0	59.0
	30-39	54	32.5	32.5	91.6
	40-49	8	4.8	4.8	96.4
	50-59	4	2.4	2.4	98.8
	22.00	2	1.2	1.2	100.0
	Total	166	100.0	100.0	

With a return rate of 79 %, the final usable data represented a total of 166 respondents (out of 210) of whom 121 (73 %) were males and 44 (27 %) females. They were aged 20-29 (59 %), 30-39 (32.5 %), 40-49 % (5%), 50-59 (2 %) reflecting the youthful characteristic of the student population.

Table 4: Construct Means and Standard Deviation

	N	Minimu m	Maximu m	Mean	Std. Deviation
Personal competence	166	1.42	4.67	3.52	.59
Pedagogical-didactic competence		1.22	5.00	3.49	.73
Medial contribution		1.00	5.00	3.41	1.11
Global media literacy		1.67	4.75	3.50	.61357

As shown in Table 4, the means for the three dimensions of media literacy; i.e., personal competence, pedagogical competence and medial contribution and the fourth composite generic media literacy are close as indeed are the standard deviations. The details for the individual items of the scale providing a more diagnostic picture are presented (see Annexure). An important observation is that the mean again tends to reflect a clustering of observations which may provide credence to the quality of the measuring instrument.

To help paint a clearer picture, the scores of respondents are presented below under Table 5, together with bandings that include categories of below basic, basic, intermediate and proficient (National Research Council. 2005). These bandings provide the necessary framework in which to place the media literacy levels of the studied teacher subjects in comparative perspective. The proficiency scales indicate that a little less than half were proficient indicating the need for intervention in terms of media literacy education.

Table 5: Proficiency Bands

Levels	Scores	Percentage of subjects in category
Below basic	43 <	4 %
Basic	43-52	9 %
Intermediate	53-70	37 %
Proficient	71-100	49 %

Analysis of Variance (ANOVA)

Two tests for analysis of variances were run for this study. The first ANOVA was conducted between the dimensions of media literacy (which subsume personal competence, pedagogical didactic competence, media contribution and a composite generic), and the age groups of the respondents (20-29, 30-39, 40-49, 50-59) as presented in Table 6.

Table 6: Media Literacy Dimensions and Age Groups

		Sum of Squares	df	Mean Square	F	Sig.
Medial contribution	Between Groups	6.304	4	1.576	1.272	.283
	Within Groups	199.404	161	1.239		
	Total	205.708	165			
Personal Competence	Between Groups	1.454	4	.364	1.043	.387
	Within Groups	56.127	161	.349		
	Total	57.582	165			
Pedagogical-Didactic	Between Groups	1.554	4	.388	.719	.580
	Within Groups	87.049	161	.541		
	Total	88.603	165			
Global literacy	Between Groups	1.693	4	.423	1.128	.345
	Within Groups	60.424	161	.375		
	Total	62.118	165			

The results as reported in Table 6 indicate statistically insignificant ($p < 0.283$; 0.387 ; 0.530 and 0.345) differences between and within the respective age groups in terms of their dimensions of media literacy. In

other words, the age-attributes of teachers were not associated with literacy levels. For this reason, there was no need for post-hoc tests as the tests did not give suggestions for a more diagnostic procedure (Keppel 2004).

As shown below under Table 7, an ANOVA test was conducted between the dimensions of media literacy and the gender of respondents. Gender had no effect on or relationship with media literacy scores. The ANOVA test revealed no statistically significant effects of gender for the four different dimensions ($F = .795, p = .453$; $F = .114, p = .893$, $F = .270, P = .764$, $F = .431, P = .651$).

Table 7: Gender and Media Literacy

		Sum of Squares	df	Mean Square	F	Sig.
Personal competence	Between Groups	.556	2	.278	.795	.453
	Within Groups	57.025	163	.350		
	Total	57.582	165			
Pedagogical-didactic	Between Groups	.123	2	.062	.114	.893
	Within Groups	88.479	163	.543		
	Total	88.603	165			
Medial contribution	Between Groups	.678	2	.339	.270	.764
	Within Groups	205.029	163	1.258		
	Total	205.708	165			
Global literacy	Between Groups	.327	2	.163	.431	.651
	Within Groups	61.791	163	.379		
	Total	62.118	165			

Qualitative Phase Methodology

As in many surveys the scale had items that sought expression of opinion to supplement the close ended items. In this section qualitative evidence of the study which sought to answer three questions not addressed in the quantitative phase is presented. More specifically data on teachers' own understanding of media literacy and its role, the role of MOE and their own relevant observation not articulated elsewhere is enunciated.

First it may be necessary to report that the open ended items review protocol led to the discovery of partially, fully completed and totally skipped items. The sifting produced a list of questionnaires that had usable responses. Responses to the three open ended questions that were designed to further enquire and address the dimensions of media literacy in the study context were read through with a focus on the research objectives. They were then categorized broadly under media literacy constructs reflecting the dimensions in the questionnaire but moving beyond to address more local considerations. As presented in Table 8, the read-through helped form categories under which to place the data from the responses under themes with corresponding informative quotes. In other words, the responses to open ended items were discourse-analyzed as important themes and selection of illuminating quotes was made to support the statistical findings (Bryman, 2004; Fairclough, 2003).

Most saliently trainee teachers valued the relevance of media literacy to their personal life as well as more relevantly their role as knowledge workers and helpers. They noted that it was increasingly becoming relevant for them as the system of education was facing new digital realities with their implications for teaching and learning. They considered the MOE as an important stakeholder in helping teachers face the changing new world of learning with matching skills and competencies. They felt that the MOE was far behind and needed to address the long-felt gap expeditiously in view of the magnitude of effect information or media has had on education. Yet they also addressed the hardware dimension as they mentioned that personal computers were still a luxury in pedagogical environments especially in rural settings. Some study participants called for curriculum revision highlighting media literacy and its implications. They expressed conviction that even elementary and secondary schools needed media literacy skills as the generation is changing with new information environments being created. There must be a match between the new information and media world and schools, students and teachers and

teaching styles.

Table 8: Themes and Quotes

Theme	Quote
Prevention	" There is a threat of hate speech and fake news" and "students need information filtering skills".
Civic role	"Teachers' roles in democratization is made bigger by media literacy"
Access	"schools need to have full access to internet"
Teacher development	" Teacher autonomy is enabled by media literacy"; "teacher professional life is simplified"; "teachers can create media suitable to their contexts"
MOE role	" MOE need to provide instructional media education to teachers "; "should give training"

Discussion

The study was designed to explain the general level of self-reported media literacy as well as the specific dimensions of media literacy among MA students training as teachers. The intention was also to discover teachers' understanding of media literacy and its importance in the context of education and role of relevant institutional actors. The research interest further included finding any systematic association between biographical factors and media literacy.

To start with a portrayal, as results in the findings section showed, the teacher participants in the study have modest media literacy self-ratings. Nearly half are proficient (48.8%) with a smaller percentage reporting intermediate levels of media literacy (37.3%). While the varied conceptualization and instrumentation of media literacy may present challenges in comparative inference across studies, the present findings are indicative of the need for a media literacy intervention as in other countries. While it may be argued that Ethiopian teachers critically need media literacy to meet the contextual challenges in the often-turbulent information and media environment,

contrary to expectations, even in technically more advanced countries, a number of teachers do not have a proper understanding of media literacy in pedagogical contexts (Fernández-Cruz & Fernández-Díaz 2016). In primary school settings, the level is even lower with barely a fifth of teachers having correct conceptions of media (Avery et al 2011). In a more upbeat report than the present Ethiopian study,, Gonzalez et al (2015) showed that teachers had fairly adequate skills of media literacy levels but wanted more structured professional courses in the digital sphere. .

As in other studies that demonstrated a rising teacher perception of the importance and role of media literacy (Scull & Kupersmidt 2012) the present study demonstrates the Ethiopian teachers desire to upgrade themselves in more technological ways to advance their pedagogical careers. Their need for professional development is justified in part by the desire to affect learning in more positive ways. As teacher participants indicated students can be easily swayed by manipulative media messages. As the antidote, media literacy can equip students with skills that are necessary to critically analyse and deconstruct all descriptions of media content. It can lead to violence prevention and enhancement of peaceful self-expression and prosocial behaviours. In fact, media literacy can go a long way in the prevention of alcohol and substance abuse (Austin and Johnson 1997) - a subject of significant concern in Ethiopia's urban schools (Kassaye, 2005; Tesfaye 2014).

But teacher media literacy needs to be clearly conceptualized and measured and a benchmark established. The measurement of teacher literacy as addressed in a number of studies (eg Gonzalez et al., 2015; Spires & Bartlett, 2012; Soldatova & Shlyapnikov, 2015) is an important step clearing the ground for intervention. Concomitantly the institutional response is a central point of responsibility as articulated by teachers calling for institutional and program interventions (Parigi 2016) and pointed out by researchers (Cortina-Perez et al 2014), Indeed institutionalization and commitment are universally called for.

In the context of the present study and the Ethiopian federation more generally the subject of media literacy requires institutional commitment at both the federal, regional and school levels. A more formal approach to media literacy that recognizes it as an area of professional development is an important first step. As study participants indicated they expect the MOE to take the lead in media literacy formalization as an area necessary for democratic development through empowerment of students via civic as well as critical thinking skills that media literacy makes possible. This expectation is anchored in international experiences and protocols addressing teacher professional development in digital skills (Unesco, 2011; Redecker & Punie, 2017).

While official intervention at the highest echelons is most vital, the results from the teacher opinions also suggest much can be done through school-based initiatives alone with the modest levels that study participants have in terms of media literacy. For one, literacy in mediated ways can be mobilized through an integrative approach in a broad context that harnesses such relevant subjects as art and music, social studies including civic education and history, film shows, and a number of other fields requiring or presenting opportunities for development of deconstruction skills (Neag 2015). Such a proposal is consistent with the observation that in many countries a variety of stakeholders (perhaps including schools, local education administrators, city councils, children's foundations etc) may help schools take the opportunity of addressing felt media literacy development needs (Dassonneville, et al 2012).

Because teaching opportunities are also good learning opportunities teachers who do not necessarily have formal media literacy preparation can have developmental opportunities to exploit. Universities may also take the initiative to offer a region or city-wide media literacy training which does not have to be elaborate or take extended periods. There are studies of a short duration of as brief as a day's training that have made significant incremental differences in teachers' media literacy

skills (Scull & Kupersmidt 2010) . These best practices can then be scaled up at the federal level at which stage a more national project may be designed involving a wide variety of national and international actors to formally introduce an evidenced media literacy curriculum at all or some levels of the education system. As the findings in the present study demonstrate, there is already a modest level of competency and a high desire to engage in media literacy education that has considered Ethiopia's dire needs for political development in the matter of rejection of all forms of violence and respect for law and order to which media literacy programs can contribute in demonstrably fruitful ways.

The challenges presented by the digital world have been global, and the effect has been far more negative for developing countries in general and more unstable countries in particular leading to occasional violence on account of disinformation and misinformation (Boyd, 2017a) that have cost poor countries and their communities the most. While there is little that is organized and offered nationally in terms of media literacy students and teachers may take advantage of informally available resources as opportunities for learning. For instance, a critical thinking skills course may help foster media literacy but its adequacy and depth remain unexamined (Potter, 2004). However a full-hearted response is necessary. Besides the training of teachers as respondents pointed out there is also the need for infrastructural support in the form of media centers equipped with relevant hardware and software but these facilities accumulate over time or be solicited through projects by local bodies or school boards.

There are desirable empirical effects demonstrated by media literacy interventions. For instance, a US study of 2,000 middle school students led to positive outcomes with a post training result of students becoming more critical consumers of information and more averse to violence (Webb & Martin, 2012). This literacy education aids the development and expression of educated and confident views on

matters of national importance in the realms of politics, society and economics (Mihailidis, 2014). These learning outcomes in addition to tolerant reception of heterogeneous and contrary views (Mutz, 2006) are important attitudinal qualities desirable in Ethiopia's universities that media literacy can be expected to nurture.

While the perspective of gender has important relevance to media literacy, in this study gender did not feature as a systematically related variable. But media literacy being a communication attribute it may be hypothesized that women are disadvantaged as technology is often a patriarchal domain as an element of the overall male dominance in communication structures. This dominance may be more apparent in resource constrained developing countries where the male share is considered to be the lion's share. Thus, along this line Tsai, Lin, and Tsai (2001) and Yen and Lee (2011) demonstrate a male advantage in communication technology domains. However, there are also contrary studies that report that females are more media literate. For instance, Trainor et al (2010) demonstrated that girls had higher degrees of media literacy because they were more communicative -both receptively and expressively. Indeed, women also need the media literacy to exercise vigilance in how they are represented often in sexist and degrading ways by the patriarchal communication industry. If they are better armed medially it may be because there is a need for a fairer self-representation and self-defense. The battle against gender-based violence and misrepresentation of women may still be in place and more communication and media power may be necessary. Thus, it may be important to probe more into media literacy taking bigger samples to put in place any necessary policy measures. On the other hand, such factors as age may be hypothesized to have systemic relations with media literacy. This was not empirically demonstrated in the present study as the ANOVA results produced no pattern of association in relevant terms. However, it is possible that larger samples can reveal a more systematic dimension as sampling considerations can affect detection of a pattern along theoretically driven postulates.

Overall, the empirical evidence in the present study has broad implications for teacher preparation. Owing to a variety of factors including complacency and attitude critical literacies are not included in teacher preparation curriculums. The case of media literacy not being taken seriously and excluded from the curriculum bears witness to the trend that can be immensely damaging to the trainee teacher as a result of failing to keep up with emerging contextual needs. However, true knowledge can be gained only when the learner is equipped with emancipative skills as offered through media literacy courses (Freire & Macedo 1987). It is therefore imperative that the recommendations of UNESCO and other bodies are acted upon and media literacy is included in the teacher preparation programs.

Conclusion

Media literacy is a compelling subject which should form an important area of policy intervention in the form of media education. It has a number of positive effects in a media saturated world where there are malignant communications that present formidable challenges and threats. In responsible environments media literacy raises good judgment capabilities, and more generally critical thinking skills that include a more positive attitude, good judgment and discernment capacities.

By taking a sample of graduate students training as teachers in a variety of subjects, the study has demonstrated that media literacy levels are not adequate even at the graduate level. The subject is a cause for concern because teachers need to be media literate themselves first as the situation and the times require high levels of literacy in this important area. In fact, the area of media literacy also concerns students at lower levels in the schools in view of the contemporary media's adverse influences to which students are vulnerable. These undesirable influences are likely to worsen as media penetration is noticeably faster than ever before and the media climate

has changed a whole generation which has been called the era of digital natives as opposed to digital migrants- a reference to the older generation.

In more national considerations, media literacy is important for teachers as the sphere of democracy requires civility and good quality information which may not be easy to acquire given the abundance of misinformation and disinformation that is apt to affect society and national survival especially if the youth do not have the capacity to filter information and evaluate media messages. Training teachers can go a long way in helping foster a generation that is not unduly affected by the unhealthy and corrupting influences of the media. Media content such as advertising, sponsored content and propaganda need to be received critically. The point the present study makes is that media literacy can enable as inoculation against harmfully unwholesome content of diverse audiovisual chemistry. It can further help as a competency and a positive force necessary for a much needed but often illusive community building and national development. The findings therefore have broad implications for teacher training as well as curricular interventions that embrace the compelling relevance of media literacy.

Limitations and recommendations

The study may have been impacted by social desirability effects resulting in inflated self-ratings of media literacy levels among teachers concerned about social-professional approval as knowledge figures. In addition, the modest sample taken and focus made on a single university may have a limiting effect on the body of evidence and its utility. However larger studies that address a more federal sample may be conducted that harness the potentialities of cocktail methods. Also considering the diagnostic limits of self-reports, actual media literacy tests may be administered to make possible a more valid assessment of media literacy among teachers. Future studies also need to consider diverse populations including students of all levels to provide a more

comprehensive picture of media literacy in Ethiopia's system of education.

References

- Amare Asgedom and Tassew Zewdie (1996). *A Survey of Pedagogical Centers in Primary Schools of Addis Ababa*. Addis Ababa: Region 14 Educational Bureau.
- Austin EW, Johnson KK (1997). Effects of Media Literacy Training on Third Graders' Decision Making for Alcohol. *Health Communication*. 9:323–349.
- Berrhanu Abera (2019). Exploring in-service Teachers Development of Technological Pedagogical Content Knowledge in Ethiopia. Paper presented at 8th International Educational Conference on Quality of Education in Ethiopia. May 30=31 Addama.
- Boyd, D. (2017a). Learning all the Wrong Things. Keynote Presented at the Annual Digital Media and Learning Conference, Irvine, California. Accessed from <https://dml2017.dmlhub.net/>
- Bryman, A. (2004). *Social Research Methods* (2nd ed.). Oxford: OUP.
- Buckingham, D. (2003). *Media Education: Literacy, Learning and Contemporary Culture*. Cambridge, UK: Polity.
- Buckingham, A & Saunders, P. (2004). *The Survey Methods Workbook: From Design To Analysis* . Polity Press.

- Bulger, M., & Davison, P. (2018). The Promises, Challenges, and Futures of Media Literacy. Retrieved from <https://datasociety.net/pubs/oh/DataAndSocietyMediaLiteracy2018.pdf>
- Carr, J. A. (1998). Information Literacy and Teacher Education. ERIC Digest. Retrieved from <https://eric.ed.gov/?id=ED424231>.
- Chang, C. S., Liu, E. Z. F., Lee, C. Y., Chen, N. S., Hu, D. C., & Lin, C. H. (2011). Developing and Validating a Media Literacy Self-evaluation Scale (MLSS) for Elementary School Students. *Turkish Online Journal of Educational Technology-TOJET*, 10,2: 63-71.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, Hillside, NJ: Lawrence Erlbaum.
- Compton, J. (2011). Frustration Vaccination? Inoculation Theory and Digital Learning. In S. P. Ferris (ed.), *Teaching, Learning and the Net Generation: Concepts and tools for Reaching Digital Learners* (pp. 61–73). Hershey, PA: IGI Global.
- Compton, V. J. (2013). Technological literacy: Implications for teaching and learning – Final report to the Ministry of Education.
- Compton J., & Ivanov, B. (2012). Untangling Threat During Inoculation-Conferred Resistance to Influence. *Communication Reports*. 25, 1–13.
- Cortina- Perez, B., Gallardo-Vigil, M. A., Angeles Jimenez -Jimenez, M. etal. (2014). Digital Illiteracy: A Challenge For 21st Century Teachers. *Cultura y Educacion/Culture and Education*, 26, 2 :231-264.

- Dassonneville, R., Quintelier, E., Hooghe, M., & Claes, E. (2012). The Relation between Civic Education and Political Attitudes and Behavior: A two-year Panel Study among Belgian late Adolescents. *Applied Developmental Science, 16*, 3: 140-150
- Duryea, E.J., (1983). Utilizing Tenets of Inoculation Theory to Develop and Evaluate a Preventive Alcohol education Intervention. *Journal of School Health, 53*: 250-256
- Fairclough, N. (2003). *Analysing Discourse. Textual Analysis for Social Research*. London: Routledge.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical Power Analyses Using G*Power 3.1: Tests for Correlation and Regression Analyses. *Behavior Research Methods, 41*, 1149-1160.
- Finnish Ministry of Education and Culture. (2013). Good Media Literacy National Policy guidelines 2013–2016. Publications of the Ministry of Education and Culture, Finland, 2013:13. Accessed from <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/75280/OKM13.pDf>
- Flores-Koulis S.(2006). Media Literacy: An Entrée for Preservice Teachers Into Critical Pedagogy. *Teaching Education, 17*(3),239-249.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research, 18*,1: 39–50.
- Freire, Paulo, and Donaldo Macedo. (1987). *Literacy: Reading the Word and the World*. Westport, Conn.: Bergin and Garvey

- Gonzalez Fernandez N., Gozalvez Perez V., & Ramirez Garcia A. (2015). The Media Competence in the Non-University Teachers. Diagnostic and Training Proposals. *Revista de Educacion*, 367, pp. 117-146.
- Gebre-Egziaber Debebe (1998). The Effect of Experience on Attitude to and on Utilization of Educational Radio Broadcasting: The Case of Tigray Region. Unpublished. M.A. thesis, Addis Ababa University.
- George, D., & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference. 11.0 update (4th ed.)*. Boston: Allyn & Bacon.
- Grizzle, A., Moore, P., Dezuanni, M., Asthana, S., Wilson, C., Banda, F., & Onumah, C. (2014). *Media and Information Literacy: Policy and Strategy Guidelines*. Unesco.
- Hammer, R. (2011). Critical Media Literacy as Engaged Pedagogy. *E-learning and Digital Media*, 8(4), 357-363.
- Hauser, R. M., Edley Jr, C. F., Koenig, J. A., & Elliott, S. W. (2005). *Measuring Literacy: Performance Levels for Adults*. National Academies Press. 500 Fifth Street NW, Washington, DC 20001.
- Hooks, B. (2010) *Teaching Critical Thinking: Practical Wisdom*. New York: Routledge.
- Hobbs, R. (1998). Building Citizenship Skills through Media Literacy Education. In Salvador, M. and Sias, P. (eds.), *The Public Voice in a Democracy at Risk*. Connecticut: Greenwood Publishing Group. 57-76.

- Jöreskog, K. G., and Wold, H. O. A. (1982). The ML and PLS Techniques for Modeling with Latent Variables: Historical and Comparative Aspects. In *Systems Under Indirect Observation*, Part I. H. O. A. Wold and K. G. Jöreskog (editors). Amsterdam: North-Holland: 263-270.
- Kassaye, Z. (2005). Sexual Experiences and Their Correlates Among Jimma University Students, Jimma, Ethiopia, 2002. *Ethiopian Journal of Health Sciences*, 15(1), 0-24.
- Kellner, D., & Share, J. (2007). Critical Media Literacy: Crucial Policy Choices for a Twenty-First-Century Democracy. *Policy Futures in Education*, 5(1), 59-69
- Livingstone, Sonia (2004) What is Media Literacy? *Intermedia*, 32, 3 :18-20.
- Lund A., Furberg A., Bakken J., Engelién K.L. (2014). What Does Professional Digital Competence Mean in Teacher Education? *Nordic Journal of Digital Literacy*, 9, 4, 281-299.
- Manalili, Rosemarie & Rehnberg, Manalili. (2008). Media Education in the Swedish Compulsory School. Retrieved from http://www.ec.europa.eu/avpolicy/media_literacy/consultation/index_en.htm
- Marten, H. (2010). Evaluating Media Literacy Education: Concepts, Theories and Future Direction. *Journal of Media Literacy Education*, 2(1), 1-22.
- Vaportzis, E., Martin, M., & Gow, A. J. (2017). A Tablet for Healthy Ageing: The Effect of a Tablet Computer Training Intervention on Cognitive Abilities in Older Adults. *The American Journal of Geriatric Psychiatry*, 25(8), 841-851.

- Mihailidis, P. (2014). *Media Literacy and the Emerging Citizen: Youth, Engagement and Participation in Digital Culture*. New York, NY: Peter Lang.
- Miller, C. H., Ivanov, B., Sims, J., Compton, J., Harrison, K. J., Parker, K. A., Parker, J.L. & Averbek, J. M. (2013). Boosting the Potency of Resistance: Combining the Motivational Forces of Inoculation and Psychological Reactance. *Human Communication Research*, 39,1: 127-155.
- Mutz, D. C. (2006). *Hearing the Other Side: Deliberative versus Participatory Democracy*. Cambridge, UK: Cambridge University Press.
- National Research Council. 2005. *Measuring Literacy: Performance Levels for Adults*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/1126>
- Neag, A. (2015). Media Literacy and the Hungarian National Core Curriculum—A Curate's Egg. *Journal of Media Literacy Education*, 7,1: 35-45.
- Parigi, L. (2016). Balancing Between ICT Training and Reflective Practice In Teachers' Professional Development. *TD – Tecnologie Didattiche*, 2,42:11-121
- Pfau, M. (1997). The Inoculation Model of Resistance to Influence. In F.J. Boster & G. Barnett (eds.), *Progress in Communication Sciences* (Vol. 13, pp. 133–171). Norwood, NJ:Ablex.

Pfau, M., Tusing, K. J., Koerner, A. F., Lee, W., Godbold, L. C., Penaloza, L. J., Yang, V. S., & Hong, Y. (1997a). Enriching the Inoculation Construct: The Role of Critical Components in the Process of Resistance. *Human Communication Research*, 24, 187-215

Postman, N. (1985). *Amusing Ourselves to Death: Public Discourse In The Age of Show Business*. New York: Penguin Books.

Potter, W. J. (2004). *Theory of Media Literacy: A Cognitive Approach*. Thousand Oaks, CA: SAGE.

Presidential Committee on Information Literacy: Final Report (1989). <http://www.ala.org/acrl/publications/whitepapers/presidential>

Ratner, Bruce .2009. A Closer Look at the Correlation Coefficient: Its Values Range Between + 1 / - 1, Or Do They? *Journal of Targeting, Measurement and Analysis for Marketing* 17, 139 – 142. doi: 10.1057/jt.2009.5.

Redecker, C., & Punie, Y. (2017). *Digital Competence Framework for Educators (DigCompEdu)*. Brussels: European Union.

Rideout, V., Roberts, D.F. & Foehr, U.G. (2005) *Generation M: Media in the Lives of 8-18-Year-Olds. A Kaiser Family Foundation Study*, March. <http://tinyurl.com/23hr843>

Ringle, C. M., Wende, S., and Becker, J.-M. 2015. "SmartPLS 3." Boenningstedt: SmartPLS GmbH, <http://www.smartpls.com>

Robertson, L., & Scheidler-Benns, J. (2016). Critical Media Literacy as a Transformative Pedagogy. *Literacy Information and Computer Education Journal*, 7(1), 2247-2253.

- Scull, T.M., & Kupersmidt J.B. (2010). An Evaluation of a Media Literacy Program Training Workshop for Late Elementary School Teachers. *Journal of Media Literacy Education*, 2, 3:199-208
- Soldatova, G. U., & Shlyapnikov, V. N. (2015). Digital Competence of Russian School Teachers. *Psikhologicheskaya Nauka i Obrazovanie*, 20, 4: 5-18.
- Spires, A. A., & Bartlett, M. E. (2012). Digital Literacies and Learning: Designing a Path Forward. Friday Institute White Paper Series Number Five. Retrieved from: <https://www.fi.ncsu.edu/wp-content/uploads/2013/05/digital-literacies-and-learning.pdf>
- TechTarget. (2016b). Information and Communications Technology— Or Technologies. Retrieved from <http://searchcio.techtarget.com/definition/ICT-information-and-communications-technology-or-technologies>
- Tesfaye, G., Derese, A., & Hambisa, M. T. (2014). Substance Use and Associated Factors among University Students in Ethiopia: A Cross-sectional Study. *Journal of Addiction*. Vol 14. Retrieved from <https://www.hindawi.com/journals/jad/2014/969837/>.
- Trainor, S., Delfabbro, P. H., Winefield, A. H., & Anderson, S. (2010). Leisure Activities and Adolescent Wellbeing. *Journal of Adolescence*, 33,1: 173-186.
- Tsai, C. C., Lin, S. J., & Tsai. M. J. (2001). Developing an Internet Attitude Scale for High School Students. *Computers and Education*, 37,1: 41-51.

- Vaportzis, E., Martin, M., & Gow, A. J. (2017). A Tablet for Healthy Ageing: The Effect of a Tablet Computer Training Intervention on Cognitive Abilities in Older Adults. *The American Journal of Geriatric Psychiatry*, 25,8: 841-851.
- Verniers, P. and Tilleul, C. (2014), Media Literacy Key Competences Frame for Teacher Training. Retrieved from <https://e-mediaeducationlab.eu/wp-content/uploads/2017/05/Output-1-Media-Literacy-Key-Competences-frame-for-teachers-training.pdf>
- Webb, T. and Martin, K. (2012). Evaluation of a US School-based Media Literacy Violence Prevention Curriculum on Changes in Knowledge and Critical Thinking among Adolescents. *Journal of Children and Media*, 6(4), 430-449.
- Wilhelm, J. (2000). Literacy by Design: Why is All This Technology So Important. *Voices from The Middle*, 7(3), 4-14.
- UNESCO (2011). *Media and Information Literacy (MIL) Curriculum and Competency framework*. Paris: UNESCO.
- UNESCO (2013). *Global Media and Information Literacy Assessment Framework: Country Readiness and Competencies*.
- UNESCO Information for ALL Programme (2012). Retrieved from <https://en.unesco.org/programme/ifap>

Annexure

Descriptive stats for Items of Constructs

	N	Minimum	Maximum	Mean	Std. Deviation
PComp1	165	1.00	5.00	3.5152	1.08541
PComp2	165	1.00	5.00	3.6242	1.07267
PComp3	166	1.00	5.00	3.9940	.95026
PComp4	165	1.00	5.00	3.6121	1.05106
PComp5	166	1.00	5.00	3.4880	1.09399
PComp6	162	1.00	5.00	3.5864	1.06114
PComp7	165	1.00	5.00	3.6242	1.10073
PComp8	165	1.00	5.00	3.7091	1.06507
PComp9	163	1.00	5.00	3.3926	1.12456
PComp10	166	1.00	5.00	3.1807	1.17184
PComp11	166	1.00	5.00	3.4639	1.12083
PComp12	166	1.00	5.00	3.1687	1.27749
Pedcom1	165	1.00	5.00	3.4121	1.16863
Pedcom2	163	1.00	5.00	3.4172	1.09891
Pedcom3	166	1.00	5.00	3.7952	1.07601
Pedcom4	166	1.00	5.00	3.5301	1.10467
Pedcom5	165	1.00	5.00	3.3758	1.10073
Pedcom6	166	1.00	5.00	3.4458	1.14683
Pedcom7	166	1.00	5.00	3.4819	1.16371
Pedcom8	164	1.00	5.00	3.5793	1.13497
Pedcom9	163	1.00	5.00	3.4172	1.12115
Medialcont1	163	1.00	5.00	3.3681	1.15981
Medialcont2	164	1.00	5.00	3.5305	1.07066
Medialcont3	164	1.00	33.00	3.3659	2.62369

Annexure 2

Correlations

		PCmean	PDmean	Meadia `Dmean	Globalit
PCmean	Pearson Correlation Sig. (2- tailed) N	1	.752**	.436**	.919**
			.000	.000	.000
PDmean	Pearson Correlation Sig. (2- tailed)	.752**	1	.460**	.916**
		.000		.000	.000

MeadiaDmean	N	166	166	166	166
	Pearson Correlation	.436**	.460**	1	.643**
	Sig. (2-tailed)	.000	.000		.000
Globallit	N	166	166	166	166
	Pearson Correlation	.919**	.916**	.643**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	166	166	166	166

** . Correlation is significant at the 0.01 level (2-tailed).
