The Digital Literacy of Seniors

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ABSTRACT This article describes national and international comparative quantitative and qualitative empirical results for media use and media behaviour of elderly people against the background of demographic change and development in the sphere of information technology. Besides gender, professional position and educational qualification, age and affiliation to a generation are – in terms of 'country', origin or culture – the most significant predictors of whether someone is familiar with the computer and the Internet and whether he or she is using it in a competent way in private life and in their occupation. In addition to the international studies covered, this article focuses principally on the German situation, because the relative increase in the proportion of elderly people in that country has advanced the furthest in comparison with the rest of the world. Germany is playing a pioneering role in this respect. Searching for explanations which go beyond quantitative interpretation, a generation-specific model of cultures of media practice is being developed which favours the generation concept, in comparison with the 'pure age' concept, thus enabling a theory-based perspective with regard to demographic change. A generation-specific culture of media practice means approaching the current media technologies with those competences and restrictions which have been learned during adolescence and with the media available at that time.

Introduction

In the discourses in educational and communicational sciences, 'digital' or 'ICT (information and communications technology) literacy' of elderly people is increasingly taken as a central theme; that is to say their (media) competences in acquiring knowledge that is useful in practice and relevant to everyday-life, *about* new media and consequently also *by means of* the new media (see as an example, Stadelhofer & Carls, 2002; Schneider, 2004; Livingstone et al, 2005). By taking an analytical approach, it is possible to attribute the devotion which groups of elderly people show with respect to the current media technologies primarily to the concurrence of two international 'mega trends': the 'IT [information technology] revolution' (Castells, 2004, pp. 31 ff.), and the 'demographic turning point in history '(Birg, 2001), which is accompanied by a change in the structure of age and ageing.

Let us briefly turn to the first point, the IT revolution: More and more new digital (media) technologies are finding their way into the market. First , they win the young, male and better-educated parts of the population and then they are gradually diffusing into the groups of elderly, female, and less-educated people (see, with respect to this issue, Sackmann & Weymann, 1994). The Internet, with its variety of mass-relevant services (www and electronic mail), is in this context merely one example; however, it is currently perhaps the most striking one for this type of change. The technologies are supplementing and altering the partly traditional collective habits of communication and with that their social, cultural, and economic participation in society; they are also creating new and hitherto unknown opportunities of exchange (e.g. chats, forum discussions, multi-user dungeons, etc.; see Turkle, 1999) and knowledge acquisition (e-learning).

The 'demographic turning point in history' signifies – to put it in simplified terms – that the birth rates in vast parts of the world are falling below the threshold of reproduction (Frevel, 2004, p. 8) and that they are facing a continuously increasing life expectancy, which results in a 'relative

increase in the percentage of elderly people' (Frevel, 2004, p. 8). These developments not only depend on the fertility and mortality rates of the populations, but also on other factors such as migration. We are dealing in this context with a worldwide trend which will reach – at different points in time – first the European societies and Asia, and subsequently Canada, both North America and South America, and finally Africa (see United Nations, 2006). Applied to Europe, the relative increase in the proportion of elderly people can, for example, be demonstrated by the fact that at the beginning of the year 2005, 16.6% of the European population was on average over the age of 65 and 4.1% was over the age of 80. Values of 24.7% for the people over the age of 65 and 7.2% for the people over the age of 80 are predicted in this context for the year 2030 (Vienna Institute et al, 2006).

The pattern of worldwide demographic change is reflected within Europe to a smaller extent. Current data indicate that Germany and Italy are playing the role of a 'pioneer' in Europe with respect to the increase in the percentage of elderly people in a population. Thus, in the year 2005, people over the age of 65 already constituted 18.6% of the German population and those over the age of 80 amounted to 4.3%. For the year 2030, it is expected that 27.5% of people will be over the age of 65 and 8% will be over the age of 80 (Vienna Institute et al, 2006). This can also be attributed to the fact that the 'natural increase' of population growth slipped into negative figures in Germany at a point in time prior to that in any other European country: namely, in 1972 (Vienna Institute et al, 2006). An average value of 2010 emerges for Europe in this context.

One of the consequences of the increase in the proportion of elderly people is seen in the 'qualitative change in the structure of age and ageing' (Backes, 2005, p. 349): the change in *age* structure refers to the 'increase in the percentage of the young people, unemployment, feminization, old age and singularisation of age'(Tews, 1990, quoted in Backes, 2005, pp. 349-350). The change in age structure is accompanied by a change in ageing structure, which draws attention among other things to an intensified occurrence of discontinuities, social insecurities, and risks in the course of a lifespan and a 'change in the family and other forms of networks' (Backes, 2005, p. 350).

Both trends – the change in the structure of age and ageing linked to demographic change and the rapid development in the field of new media technologies – constitute the prerequisite for the plausible assumption that in future we will have to deal with an even more intense use of new media technologies on the part of elderly people – among other things in the field of continuing education. However, it has to be taken into consideration in this context that such prognoses always involve immense uncertainty (cf. Schröder & Gilberg, 2005, p. 151).

Taking into account the background outlined above, this article seeks to clarify empirically existing prerequisites *and determining factors for digital literacy of elderly people by making an international comparison*. The term 'elderly people' denotes people who have passed the age of 60.[1] Data collected by survey research in Germany will be presented and will be aligned with the corresponding international studies.

Subsequent to a critique of the Organisation for Economic Cooperation and Development (OECD) literacy approach, an alternative theoretical perspective will be described which will put a greater emphasis on the issue of what significance the new technologies already have or may obtain in the future for these age groups in the context of educational processes.

Quantitative Results I: how many people belonging to the 50+ generation make use of the Internet in Germany and what for?

According to the ARD & ZDF online study 2005 (Eimeren & Frees, 2005, p. 364), about 57% of all Germans are now online users, which means that they have used the Internet at least occasionally or within the past four weeks. This use, declared by the individuals themselves in telephone surveys, differs strongly depending on gender [2], education [3] and especially age: Whereas the youngest cohorts (14-19 years of age) reached values of Internet use of around 90% in 2005, this value declines with increasing age of the people questioned: 20-29 years: 85.3%; 30-39 years: 78.8%; 40-49 years: 70.3%. In the 50-59 years age group, 55% of the people questioned stated that they had used the Internet. People over the age of 60 are combined in a group in the representative study as

'60 years of age and older'. They reach a value of 18% (18.4% 'occasionally' and 18% 'in the past four weeks').

At first glance, these values confirm common prejudices against the use of new media technologies on the part of elderly people. We are dealing in this context with relatively Internet-abstinent groups. However, appearances are deceptive, because by looking at the development of Internet use over the years (see Table I), one discovers that the largest extent of growth in Internet use can be found among the cohorts of people over the age of 60: They grew from 4% in 2000 to 18% in 2005, which corresponds to more than a quadrupling.

	Overall	Men	Women	14-19 years	20-29 years	30-39 years	40-49 years	50-59 years	60+ years
2000	29	37	21	49	55	41	32	22	4
2005	58	68	49	96	85	80	71	57	18

Table I. Comparison of occasional Internet use in percentages in Germany in 2000 and 2005.
Source: Gerhards & Klingler, 2006, p. 85 referring the ARD & ZDF online studies 2000 and 2005.

The other groups cannot keep up with these results, although it is striking in this context as well that the 40-49-year-olds and those aged 50-59 exhibited higher rates of increase than the three 'young' age groups. Of course, this is also related to the fact that in the case of relatively high saturation levels, such high rates of increase cannot be kept up. As far as the figures are concerned, if one believes in this kind of survey, we are dealing nowadays with a not insignificant and above all fast-growing share of people over the age of 60 who are using the Internet for themselves.

The most recent figures from other research institutes validate this trend; however, they also arouse some suspicion about this form of telephone survey research. According to a representative survey of the Forschungsgruppe Wahlen (a group of researchers whose work focuses on elections), two thirds (66%) of all Germans starting from the age of 18 had access to the Internet in the second quarter of 2006. The 50-59 year olds amounted to 69% and those over the age of 60 amounted to 35% [4], which would almost correspond to a doubling in comparison with the ARD & ZDF figures cited above. Nevertheless, both these surveys demonstrate that the Internet use of people over the age of 60 has increased considerably in recent years. Among other things, the ARD & ZDF authors see the fact that the Internet has 'lost its aura of being a medium which is complicated, expensive and difficult to learn' (Eimeren & Frees, 2005, p. 365) as a reason for the increased use of the Internet among elderly people and those who are not employed. Moreover, the cohorts now reaching the 60+ age groups had on average a higher formal education than those reaching adolescence in the 1940s (Blödorn & Gerhards, 2004, p. 163). In the next 10 years, the first beneficiaries of the expansion of education in Germany will progress to the '60+ group': those born in the mid-1950s. This 50+ group will also then be related to its media use as 'the hinge with respect to the younger age groups' (Blödorn & Gerhards, 2004, p. 174). Together with the 40-49-year-olds these cohorts will 'represent the large number of "elderly people" in the future'. 'A considerable part of them will then have been just as familiar with personal computers and the Internet as with the classic media for many years' (Blödorn & Gerhards, 2004, p. 174). The studies mentioned demonstrate comparatively well what the facts are with respect to the frequency of Internet use in the case of elderly people in Germany. On the basis of further national and international empirical research results, the following section will look into the question more closely related to education as to which competences these persons show when using the Internet.

Quantitative Results II: media competence studies and the studies of the OECD in the ICT literacy of adults

The first part of this section will deal by means of an example with an empirical study from Bielefeld on the media competence of elderly people (Treumann et al, 2002). The second part will then refer to the international discussion on 'information and communication technologies literacy' ('ICT-literacy') or 'digital literacy' (OECD 2000, 2005).

Media Competence of Adults: an empirical study from Bielefeld

The concept of media competence at a national level has been up to this time (Loebe & Severing, 2006) an important component for approaching the way in which adults deal with media. This has principally been differentiated theoretically and programmatically and recently also empirically. In Germany, the concept of media competence as described by Dieter Baacke is mostly referred to in this connection. He conceptualised it in the 1970s as a form of 'communicative competence' (Baacke, 1973) and reduced it in the following period to a formula which was quite easy to deal with. Media competence for him comprises the four levels of 'media critique', 'knowledge about media', 'media use' and 'media production' [5] (cf. in this context Baacke, 1996, p. 120; critically on this topic: Sander & Dewe, 1996; Schäffer & Wittpoth, 1997; Marotzki, 2004; Pietraß, 2006, pp. 32-40 and in this issue).

A quantitative empirical operationalisation of Baacke's concept of media competence for adults was finally presented by a team in Bielefeld (Germany). The study, which is representative of the state of North Rhine-Westphalia (Treumann et al, 2002), is explicitly about 'older adults', that is to say – as defined by the authors – about people between 35 and 74 years of age. The team attempted to ascertain the dimensions of media competence (media critique, science of media, media use, and media structure) in isolation and to relate them to the socio-demographic characteristics of the people questioned as a dependent variable. The statements regarding the relationship between computer and Internet use and age are of relevance to our interest. In this context, the authors discovered 'generation- and gender-specific medium-related knowledge gaps' with respect to 'frequent up to very frequent' computer use (Treumann et al, 2002, p. 226). Comprehensive relationships between age, gender, education, and job and the use of computers and the Internet are subsumed by the authors in an ideal-type of compression. This started from the assumption that 'computer use as a frequent leisure activity among the adults at an advanced age is mainly practised by the 35 to 49 year-old employed men with a higher level of education'(Treumann et al, 2002, p. 77). This generation- and gender-specific usage gap would increase by including the Internet. Again, the 35-49 year-old employed men with a higher level of education constitute the group with the highest level of usage (the so-called avant-garde). On the other hand, a '50 to 74 year-old non-working woman' is depicted as representing maximum indifference to intense computer and Internet use.

With the help of cluster analysis procedures, the authors finally identified six types that differed in their media competence: the 'persons who like doing fiddly or finicky things', the 'avant-gardists', the 'ordinary users', the 'optimists', the 'indifferent'and the 'hesitating' [6] (Treumann et al, 2002, pP. 237ff.) As was to be expected, there are also 'generation gaps' and 'gender gaps' in this context as well as connections between the level of school education and employment. Thus, only a comparatively small number of elderly people, less educated and employed women are a part of the 'avant-gardist' type, and conversely, they are part of the 'indifferent' and 'hesitating' who tend towards the 'type of maximum indifference'. According to the authors, they 'are in need of support, in order to obtain an adequate competence in the field of computer and Internet use, so that the knowledge gap between them and the other types does not keep growing' (Treumann et al, 2002, pp. 242; cf. also Hugger, 2003).

ICT or Digital Literacy of Adults

In the international field, media competence is increasingly treated as a sub-category of the 'literacy' concept, which has been favoured by the OECD since the 1990s.[7] The OECD commissioned large survey studies which deal comparatively with the standards of education of adults, that is to say, according to their definition, of people between the age of 16 and 65: the International Adult Literacy Survey (IALS) and the Adult Literacy and Life Skills Survey (ALL).

From the last-named country-comprehensive study it follows that there are great differences with respect to computer and Internet use within the participating countries. They confirm the theses outlined in the previous section on the 'digital divide', that is to say, the degree of participation in information and communication technologies depending on socio-economic status. There is thus a significant relationship between the size of one's salary, the formal standard of education, and the profession practised on the one hand, and between literacy skills and access to a

computer and the Internet (OECD, 2005, pP. 192 ff.) on the other. In addition to this, the following is of interest with regard to our concerns:

> Results ... suggest that there is a strong relationship between age and the intensity of using computers for task-oriented purposes. Moreover, the patterns are similar across countries. Older adults use computers for task-oriented purposes less intensively than younger adults. Many of the tasks used to construct the index are associated with computer use at work, such as writing or editing text, managing accounts or spreadsheets, programming, creating presentations or keeping a schedule or calendar. The largest difference in intensity of use is between the ages of 46 to 55 and 56 to 65, suggesting that older workers and retired persons are not performing these tasks regularly. While not reported here, the ICT–age relationship is even stronger with respect to the diversity and intensity of Internet use. (OECD, 2005, p. 188)

It is of significance in this context that the intensity of the activities decreases with increasing age as far as task-oriented purposes and aims are concerned. The reference to the largest difference in 'intensity of use' between the age groups of 46-55 and 56-65 corresponds partly to the findings from the ARD & ZDF online research, described above, with respect to the 'hinge function' of the 50-59 age group regarding the level of online media use (Blödorn & Gerhards, 2004, p. 174). It finds its counterpart as well in the Bielefeld media competence study presented above, where the frequent and very frequent leisure-time use of the computer still maintains a certain standard (11%) among the 50-59 age group. This also is supported by the results of the Forschungsgruppe Wahlen.

From an international comparative perspective, we may note, therefore, that the variable 'age' constitutes a nationally and culturally comprehensive constant (applied to Western industrialised countries) for predicting the probability of using the new media. This induces the authors of the ALL study to make the following statement: 'There is a strong relationship between age and the intensity of using computers for task-oriented purposes. Moreover, the patterns are similar across countries. Older adults use computers for task-oriented purposes less intensively than younger adults' (OECD, 2005, p. 188). This does not apply to other factors such as gender, remunerative occupation, formal education and literacy. There are in part considerable differences in this context between individual countries. Thus, for example, gender-specific differences in computer use for 'task-oriented purposes' in Bermuda, Canada and the United States may be disregarded, whereas men in Switzerland, Norway and Italy are still more familiar with computers and they use them to a greater extent (cf. OECD, 2005, pp. 189ff).

Concerning the Critique of the ICT or the Digital Literacy Concept of the OECD

To avoid misunderstanding: the following critique of media literacy is a critique of the OECD concept of media literacy and not a critique of general concepts of media literacy used within the English language literature, which is much closer to the notion of 'Bildung' than 'competence' (see for this purpose the article by Buckingham in this issue of *RCIE*). In the 2005 OECD study the orientation towards economic benchmarking is expressed when 'ICT use and outcomes' is mentioned. In this case, the outcomes refer to the measuring of 'the combined effect of literacy skills and different levels of ICT use on personal income' (OECD, 2005, p. 193). 'Personal income' is about 'having money/not having money', that is to say, about the 'guideline difference' of the subsystem of the economy, in order to place it in Luhmann's system theory, and not about the theory of imparting and acquiring of knowledge, as Kade (1997) determines it, for example, for education.

Finally, the OECD definition of literacy itself ('the ability to understand and employ printed information in daily activities, at home, at work, and in the community – to achieve one's goals, and to develop one's knowledge' [OECD, 2000, p. x]), contains – by getting to the heart of the matter – a pragmatic concept linking text comprehension with the use of the comprehended subject matter in professional, private, and other situations of everyday life. Linking the literacy concept to this specific perception of literacy arouses critique in this context. Stefan Sting (2005, p. 30), for example, with reference to the German PISA (Programme for International Student Assessment) discussion, criticises the fact that the OECD literacy concept emanates from a 'neutral unity concept', which is not tenable in view of the complexity of literacy and literacy-cultural

education and its embedding in 'media, cultural and social contexts' (see also Benner, 2002; Felden, 2005).

In addition to this restriction of the basic literacy concept to specific methods, there is also the fact that – to make things difficult – there are with respect to ICT and digital literacy for the most part multi-medially linked content integrated in the ICTs, in the case of which auditive, visual, written (and in the future probably also haptic and olfactory) information is presented. The restriction to an already limited, specific form of literacy inherent in the literacy concept of the OECD is transferred in this context without difficulty to other media formats. However, the fact that already media competence cannot be reduced to such a narrow dimension of literacy has become a platitude of thinking and behaviour in media education. In view of the restriction to task orientation, many competences acquired through the medium of computer and Internet games (e.g. Fromme, 2003, 2006) are thus not taken into consideration; the same applies to all dimensions of aesthetic education (cf. Felden, 2005). By taking the so-called 'pictorial' or 'iconic turns' (Mitchell, 1994) into account, the restriction to this kind of understanding of 'literacy' seems no longer to be appropriate: in view of the rapid empirical and theoretical developments in the science of education (Ehrenspeck & Schäffer, 2003; Schäffer, 2005a), it is becoming increasingly problematic to leave these levels completely out of consideration.[8]

In spite of any criticism, the results from the survey research presented in the preceding sections provide, nevertheless, significant indications of differences with respect to the media use and media competence of elderly people and draw attention to the relationship between literacy and the use of ICTs of the older generation. The recognition is central in this context that the countries participating in the OECD studies presented differ from each other in many respects with regard to media use and competence and that age is of no importance as far as the distinguishing features between the countries are concerned. In order to understand the peculiarities of media use better, it is, moreover, important to take the qualitative aspects of media use into account. Especially since Germany plays a pioneering role with respect to the relative increase in the percentage of the elderly people of a population on a European and even more on a worldwide level, it seems to be justified even in the case of an internationally comparative formulation of the question, that a qualitative study from one country (Germany) dealing with the generation-specific dimension of computer- and Internet-oriented practical experiences, will be elaborated on in the following passage of text.

Qualitative Reconstructive Results: generation-specific cultures of media practice as a framework for digital media education of elderly people

From the survey data presented so far, we learn quite a lot about the 'regularities' of media use. However, the 'rules' which form the basis of the regularities vary, a fact that creates difficulties for the survey research. While the 'regularities' of media reception can be ascertained by quantifying measures with a greater or lesser degree of quality either by means of questioning or other objectifying techniques [9], the *implicit rules*, which form the basis of media behaviour, that is to say, their being bound by collective practical experiences and patterns of orientation, cannot be comprehended by explicit questioning. Qualitative reconstructive approaches are more adequate for these purposes (Bohnsack, 2003; Schäffer, 2005b; Michel, 2006), since they do not decontextualise the behaviour; however, they take into consideration that media behaviour is embedded in a network of collective orientations: It can be located in biography, milieu, gender and generation specific contexts and it is also related to the social and cultural milieu from which the technology originated. In the following, outcomes of a study on 'generation-specific cultures of media practice' (Schäffer, 2003) will be referred to, which takes into account methodical-methodological aspects in a qualitative reconstructive setting.

The Behaviour of Elderly People with New Media in the Context of Generation-Specific Media Practice Cultures

In the course of this study, group discussions were held with people in three age groups (14-17 years of age; about 40; about 65), in which their practice with new media technologies was

investigated.[10] From this study it emerges that the media activity of different age groups in society is subject to a generation-specific 'setting and scope' (Wittpoth, 1994) depending upon affiliation to 'generation-specific cultures of media practice'. This somewhat unwieldy technical term (which will be abbreviated as GMPC) was developed on the basis of an analysis of empirical material and appropriate generation, media and technology theories:

- In the case of the *generation-theoretical localisation of the study*, special emphasis was placed neither on a cohort model (AgePeriodCohort Modelling) – as is usual in quantitative research (Schäffer, 2005c, p. 195 ff.) – nor on a generation-relationship model (Ecarius, 1998; Lüscher & Liegle, 2003) – as discussed in the field of educational science, but on a generation model associated with Karl Mannheim with his subdivision of generation embedding, generation units and generation interrelations (Mannheim, 1964). Mannheim's theories of conjunctive experiences (Mannheim, 1980) have been a valuable addition to this concept. The terms 'gender' and 'milieu', together with 'generation', may thus be understood as *a* dimension of conjunctive (i.e. connecting) experiences (cf. in this context Bohnsack & Schäffer, 2002), which can be developed reasonably if those dimensions relate to one another or if they are mutually embraced.
- A broad media concept was used *media-theoretically*, allowing, on the one hand, teachers to be conceived as 'human media' (Faulstich, 1996), that is to say, to take the media function of the teacher into account and to apply it to the technical media used by the teacher. On the other hand, an extension of Joshua Meyrowitz's media theory was used, which starts from the assumption – by referring to Marshall McLuhan and Erving Goffman – that new 'definitions of situations' are developing in important spheres of social interaction through media behaviour, which result in collectively altered behaviour (see Meyrowitz, 1987; also Schäffer, 2003, pp. 95ff.)
- Since the new media involve technologies, a technological-philosophical and a technological-sociological distinction has been added as a third perspective focusing on the generation-specific behaviour 'together with' media technologies. The phrase 'together with' conceals a perspective on the behaviour by (media) technology, by means of which an attempt is made, if not to remove, yet at least to ease the behavioural-theoretical dichotomy between people and technology. The actor-network theory of Bruno Latour stands among other things for this new approach towards interrelating people and technology (Latour, 1998, 2002). According to Latour's approach, the behaviour of people and their technologies is to be conceived as a *joint* collective behaviour of 'hybrid actors', i.e. of different 'combinations' of human and non-human aspects of behaviour, which cannot be separated from each other in the majority of cases. Thus, Latour grants a quasi-subject status to technology. Situating Latour's theory vis-à-vis the new media technologies behaviour of a person, for example, in connection with his/her computer or mobile phone is only conceivable as behaviour 'together with this computer' or 'together with this mobile phone'. The technologies are not 'employed' or 'used' and they are also not being 'operated'. However, they form a *hybrid unity* together with the people interacting with them in practice.

The previously mentioned three perspectives were reflected in the outcomes of the empirical-reconstructive theory formation and integrated into a theory of *generation-specific cultures of media practice*. This theory starts mainly from the assumption that independent forms and styles of behaviour jointly with the available media develop for the respective cohorts in their youth on the basis of generation-specific media experiences and practice. These styles of action are intensifying in *cultures of media practice* and they appear to the actors in their youth to be a quasi 'natural' form of acting by means of media per se. We are dealing in this context with a *naturalisation of independent media practice by young people*, which becomes evident among the younger groups of the study in the narrations and descriptions of their own computer and Internet practice. From this it follows that they acquire their knowledge above all in peer group contexts within the framework of practical experience. This fact is not noticeable until a comparative analysis is conducted with the older groups of the study. Among the younger people, this tendency to naturalise media practice can be seen in cases where people speak about the media practice of the elderly, which in their opinion is inadequate. They simply cannot understand how persons can 'act that stupidly', so to speak, when it comes to operating a computer or using the Internet.

These cultures of media practice, which have been hypostatised as 'normal' in adolescence have obviously – this follows from the group discussions of the older age groups – a tendency to be

strengthened and they are gradually gaining a generation-specific dimension. This happens naturally by means of an interaction of other experiences, which are characteristic of the respective generations, that do not apply to the media.

They intensify and become *generation-specific cultures of media practice* (GMPCs), which include all habits, aesthetic preferences and aversions; that is to say, all habitual dispositions with reference to certain media.

The Media Practice Cultures of Older Generations – taught to use analogue media

There is very clear evidence of this habitual disposition amongst the oldest groups of the study. These groups tend to approach computers and the Internet with a model of carefully planned and reliably conducted action towards a set goal. For them as members of the post-war generation, this model of action is adequate.

This is reflected, for example, in the finding that they initially approach new technologies by applying the media practices they picked up during adolescence, including the logic inherent in these practices, and then repeatedly find themselves confronted with – and above all amazed by – all the other possibilities these technologies have to offer.

This can be explained briefly with the example of letter writing. Since the arrival of modern technology, this ancient cultural skill has undergone fundamental changes and therefore serves as a good example of a logic of action taught on analogue media. When you create a letter with a typewriter or by hand, it is first of all necessary to think in detail about what you want to write. This is because from an aesthetic point of view, the letter will otherwise be useless due to all the mistakes it contains. Nowadays, word processing programmes such as Word or StarOffice offer a wide range of options for cancelling the decisions you make while creating your text. For the older generations, this is far from being a matter of course (as is the case for the adolescents in the sample, who succinctly state that they can run a German essay through the spell check again when they've finished it) but rather a reason to be grateful and pleased. This is deliberately emphasised in the group discussion. In the illustrative example below, Mr Deusen (Dm, name changed), a 68 year-old retired machinist, and Mr Baum (Bm, name changed), a 70 year-old retired lawyer, lead a discussion, in which another four individuals take part.[11] The group is taking part in a Word course at an adult evening school (transcript taken from Schäffer, 2003, p.182-183).[12]

Dm: Ok (.) and what I really love about computers is when I've written a letter. Hardly have you – and I must say I've *never* liked writing letters (.)
Bm: /(with music)
Dm: /because if I make ... if I make a mistake. I think to myself 'What are you going to do now? You start all over again' (.)
Bm: / @(.)@ yes
Me: / @(.)@
Dm: /'cause that's just the way I am – I'd rather write the letter again. It sometimes really took me half a day to write a letter
Bm: /@(.)@ yes
Me: /@(.)@
Dm: /and it's so marvellous. You can write the letter without even looking, and you can improve it afterwards, and you can format it (.)

Using the meticulous action model as a basis, Mr Deusen sometimes needed 'half a day' to write a letter. Nowadays, however, he can write one 'without even looking'. Up to a certain point, you can do whatever you want to amend the decisions you have made as to what to write or how to write something. The writer is thus relieved of some of the pressure involved in making these decisions. There is no need for him to think in terms of the final outcome, a fact that is also shown here by the fact that Mr Deusen can focus all his attention on what he wants to write and not on the actual act of writing ('you can write ... without even looking'). At the same time, he does not have to give up his aesthetic right to accuracy ('you can improve it afterwards').

All the other individuals who take part in the discussion agree with the narrative: Mr Deusen, the construction mechanic, expresses something that is consistent with the lawyer's experience and also with that of the other group members, who also differ in terms of their educational

environment and gender. Mr Deusen's description thus expresses *how this generation shares a common experience with modern media – common in that it is not restricted to any particular educational background or gender*. The generation-specific differences in comparison to other cohorts become evident in many details that are erroneously assumed to be so insignificant that they are not even taken into account in the survey research. Another example is the fact that a computer 'shuts down', i.e. is switched off, via the 'Start' command, something that seems paradoxical to the older generation because it fundamentally contradicts what they are used to in analogue technology: record players, cassette recorders, etc. have an on and off switch (cf. Bohnsack & Schäffer, 2002).

Procedures of Rational-Cognitive Acquisition amongst Older Generations versus Comparatively Effortless Habitualisation of Media Usage amongst Adolescents

Several other passages from the group discussions, which cannot be quoted in detail, reveal that this experience – described here in a little more detail with the example of letter writing on a computer – is representative of this generation's way of handling digitalised technology in general. Older people have to make a repeated effort to visualise the logics of action that are incorporated in technology. This is because in contrast to all the young members of the sample – and very much in conformance with Pierre Bourdieu's ideas – the older people did not learn these logics through incorporation and habitualisation in adolescence. In contrast to the adolescents, the older generations have to undergo laborious *procedures of rational-cognitive acquisition*. With regard to the new media, we can refer to two methods of acquisition. On the one hand, we have a method of *comparatively effortless habitualisation of ways of handling media* in peer group contexts on the part of the young generation, and on the other hand, we have a *method of laborious cognitive visualisation* on the part of the old and very old generations. In many respects, the two methods are broken and modified [13]– a fact that for reasons of space can only be emphasised but not elaborated on here – but fundamentally they tend to remain valid.

The decisive factor is that the form of acquisition referred to here as 'habitualisation' refers essentially to dimensions of human action and experience that generally tend to be attributed to the aesthetic experience. Our letter writers, for example, discard a letter by having to cross out words or sentences not because the contents are incorrect but for aesthetic reasons – they want to make a good impression of themselves on the recipient. Accordingly, the discussions also implicitly deal to a great extent with *aesthetic value judgements* concerning media technologies. For example, you have to think it is 'nice', 'pleasant' or 'to your taste' to become involved with the two-dimensional world of computer monitors – to say nothing of the sound of the ventilators in a poorly air-conditioned computer laboratory, the unfamiliar haptics of keyboards, the need to sit in a certain position in order to be able to see something on the monitor, or – to cite a different modern-day medium – to find a ring tone designed for the taste of 14-19 year-olds as the basic setting for a new mobile phone. However, these aesthetic dimensions, which are difficult to grasp but immensely directional, are ignored by media competence theorists or by researchers who base their work on literacy concepts. To some extent, aesthetic/playful and haptic moments of action with new media form an action-related *habitual undercurrent*, which many people employed in senior citizen education intuitively understand but are unable to bring to the point. As shown in the examples above, what is needed are the 'sensors' of qualitatively reconstructed research to render the directional implication explicit.

Concluding Remarks and Prospects

Fundamentally, some of the national (ARD & ZDF) and international (OECD) quantitative studies are implicitly oriented towards a *deficit model of age*. Although aimed at 'competences', these studies give rise to a range of positions in which older people tend to achieve poorer results (or are not taken into account). Partly, of course, this also has something to do with the design of the items, which tend to be geared towards the 'normal' gainfully employed adult and, inevitably, can therefore only take into account to an inadequate extent the concerns of older people who are no longer gainfully employed. The national media competence study from Bielefeld avoids this risk in that it interrelates the contexts of educational level, gainful employment, gender and age more

clearly than all the other studies and thus avoids attributing things to the age factor alone. This study clearly shows that age alone is not a sufficient factor for 'explaining' insufficient 'media competence': the generation gap is accompanied by an education gap and an employment gap.

Against the background of these results, the support measures demanded by specialists from the fields of adult and old-age education for providing media education to older people are ambivalent to say the least. Attempts to justify further education, advice, presentation, etc., frequently focus on age alone (and sometimes on gender) (e.g. Stadelhofer & Carls, 2002). With this in mind, if older people do not want to lose touch with society or, in more positive terms, if they wish to play an active role in social development, they must learn in a 'self-controlled' manner with the new media. As a result, the deficit perspective is basically perpetuated on older people, and the other factors that regulate the social involvement of older people through access to new media technologies (education, previous gainful employment, gender) tend to be ignored.

Contrary to the implicit deficit semantics of some quantitative studies, these studies, on the other hand, show that in the wake of the change in age structure and above all in ageing structure – even when compared on an international level – we are faced with a rapid increase in the social involvement of older cohorts in modern media technologies. This increase does not only apply to the well-educated male proportion of the respective cohorts but also to an increasing extent to women and poorly educated segments of the population. Meanwhile, it is quite evident that one aspect of *ageing* is, to an increasing extent (and for an increasing number of groups of people), basic media competence, and so whether it is at all possible to still justify the demand for supporting media competence in older people can be questioned. When the time comes for the 50-59 year-old age group, which is already quite well versed (not to mention those cohorts who are even younger), to move up to the position of those who are over 60, the 'problem' (if there is one) will sort itself out or will remain restricted to the (socio-structurally definable) parts of the respective cohorts who otherwise lack cultural, social and economic participation in society.

That is all in the compass of quantitative approaches. If you are interested in more detailed explanations as to why the older cohorts still deal much less with the new media, you will have to depend on directional generation-specific approaches. This is covered by the empirical study and theory of *generation-specific media practice cultures*. It explains why older cohorts pay less attention to the new technologies, a fact that is repeatedly confirmed cross-nationally in survey research. We are quite clearly confronted here not with an age effect, i.e. an increasing lack of interest in new things owing to the inability to keep up as a result of lack of competences, but with a *real generation effect*. Those who are over 60 today have made a habit of the media practice cultures they acquired during adolescence and approach modern technologies from this perspective. The associated methods of acquiring knowledge through new media technologies are more difficult and time-consuming for them than they are for the younger generation, which is why many of them think twice before 'turning digital', so to speak. Either that or they seek help from members of the younger generation. The subsequent cohorts of over fifties and over forties, on the other hand, have not had the opportunity to have playful and peer-group-related experiences with the new technologies (because these technologies did not yet exist when they were adolescents). However, since they are often confronted with the need to deal with some aspects of new media technologies at work, it can be assumed in the case of these cohorts that there are mixed forms ranging from the effortless habitualisation of certain media practices amongst adolescents on the one hand and a method of laborious cognitive visualisation of the oldest on the other hand. This finding is also confirmed in the data of the survey research, in which the 40-50 year-olds function – with regard to the participation rates – as a 'link' between the age groups.

The qualitative findings indicate that older categories of people are also able to cope with technology, albeit in their own good time, within the scope of what is relevant to them, and above all independently of their biographical and educational environment and gender specific disposition.

From this perspective, all implicit deficit models are out of place, a fact that is also suggested by the findings of the more recent psychological learning and memory research (overview in Kullmann & Seidel, 2005, pp. 39ff.) However, older people have to pay much more *conscious cognitive attention* to what is going on than adolescents, and this is comparatively stressful. On the other hand, many adolescents would probably have difficulties handling a real fountain pen

competently – to stick to the above example – because this media practice is not part of their repertoire of what is learnt in adolescence and optimally habitualised practices.

Germany's results from qualitative and quantitative studies are significant due to this country's pioneering role in the process of demographic change. In this context, however, it is important to bear in mind that it cannot be assumed that when other countries have reached Germany's present level of increase in the percentage of old people the relationship between senior citizens and new media will be the same. On the contrary, during the time that has lapsed technical development will have undoubtedly given rise to new human–machine collectives (Latour, 1998) that provide new settings and scopes (Wittpoth, 1994) for dealing with new media. These cohorts have also had far more experience with the technologies during their adolescence. From this point of view, the results produced can be evaluated generally in an abstract form as the first indications of the relationship between senior citizens and new media and also have a certain prognostic value. However, this does not relieve internationally comparative research of the task of implementing further research activities on the level of country comparisons that would have to take three different issues into account: (a) it would involve the inclusion of genuinely educational science (e.g. media-educational and andragogical) issues; (b) in addition to the quantitative research approaches, the research designs would also have to be used triangularly; and last but not least (c) it would be necessary to find a way of differentiating validly between age and generation effects. A methodically viable but probably unaffordable solution would be an equally quantitatively and qualitatively designed comparative panel design which would have to include countries with various age structures (e.g. Germany, USA and India).

Notes

[1] Given the broad multidisciplinary discourse about age and ageing (Backes & Clemens, 2003), the conceptual description of the age group is deliberately attached pragmatically to the chronological age. Apart from this pragmatic approach it would have to be taken into account that the 'ageing process' of a person already starts in the first year of his/her life and that determining if someone is 'old' depends on his/her position in society. Therefore, the self- and alien- perception of being 'old' is dependent on historical, cultural, social, cultural, societal and psychological contextualisation (Göckenjahn, 2000).

[2] 66.2 % of males, but only 48.0% of females use the Internet.

[3] Elementary school: 38.5%; secondary schools 71.0 %; university entrance diploma 84.8 %; university study 83.1%.

[4] By taking a look in this age group of people over the age of 60 at the dependency of the Internet use on gender, one will notice a clear difference between men (44% of users) and women (28% of users). The gender differentiation in Internet use is declining more and more with decreasing age: there are only minimal differences among the people under the age of 35 (women: 85%; men: 87%). The figures of the Forschungsgruppe Wahlen indicate in this respect that the gender-related 'digital divide' is possibly becoming more and more a problem of older generations (but see the results in Treumann et al, 2002).

[5] The organization presented different studies concerning the 'literacy' of relevant population segments in their member states, of which the PISA study (Baumert et al, 2003) is probable the most famous one. Literacy is understood as 'the ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one's goals, and to develop one's knowledge' (OECD, 2000, p. x; see also Preißer, 2004).

[6] For a study on the relationship between visuality and textuality among female seniors in the Internet, see Nohl (2002).

[7] For example, the tracking procedure in the case of the use of computers or viewing figure in the case of television consumption.

[8] A more precise conception and the empirical structure of the study cannot be discussed in detail in this case (see in this context Schäffer, 2003, 2005b).

[9] A 61 year-old retired female stock manager; a 60 year-old retired female pharmacist; a 64 year-old retired shipbuilding engineer; a 57 year-old former engine fitter of building machinery; and a 65 year-old retired female doctor.

[10] Gender and milieu specific dimensions of conjunctive experiences have already been mentioned; other dimensions of conjunctive spheres of experiences are, for example, ethnic affiliations, regional affiliation (town/country), affiliation to a professional milieu and many more.

[11] A 61 year-old retired materials manager (female); a 60 year-old retired pharmacist (female); a 64 year-old retired naval architect (male); a 57 year-old former construction mechanic (male); a 65 year-old retired nurse (female).

[12] Transcription: Dm = D_male; @(.)@ stands for a loud short laugh; / indicates where there is an overlap.

[13] Gender and background specific dimensions of conjunctive experience have already been touched upon: other dimensions of conjunctive scopes of experience are ethnic origins, regional origins (city/country), affiliation to a professional environment, etc.

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