E-learning in a low-status female profession: the role of motivation, anxiety and social support in the learning divide

M. Vandenbroeck, G. Verschelden & T. Boonaert
Department of Social Welfare Studies, Ghent University, Dunantlaan 2, Ghent, Belgium

Abstract
The literature seems to suggest that women may be at risk from being excluded from adult education programmes, which use e-learning, especially when they have low economic status. Based on a survey of 551 women, family day care providers, we conclude that there is a persistent divide in PC access and use, as well as in perceived PC skills according to age. Yet, this divide seems to run less along traditional lines, suggesting that personal factors play a more important role. Motivation and anxiety are two related but distinct personal factors that influence computer use and skills in this population. We also found that these factors are mediated by the family context: motivation is higher when (young) children are present in the family. Moreover, children may represent an important form of social support for women not yet using computers. This study concludes that the concerns about the gender gap in computer use may benefit from taking the scaffolding possibilities of the family into consideration and that there may be a case for growing optimism in the use of information and communication technology for adult learning in specific, gender-segregated professions with low status.

Keywords
anxiety, digital divide, gender gap, ICT, motivation, social support.

Introduction
There is increased interest in lifelong learning in formal as well as non-formal settings as a result of policies for lifelong learning and for widening access (Osborne et al. 2004). EU policy documents make specific reference to the contribution of lifelong learning in reducing social exclusion and promoting equal opportunities (European Commission 1995, 2000, 2001b; Organisation for Economic Co-operation and Development 1996). There is, however, some concern about the lifelong learning discourse excluding particular groups from the learning society (Edwards et al. 2001; Gorard 2003). Recently, there has been much debate over the potential associated with information and communication technology (ICT), to overcome barriers such as distance and time (Barraket 2004) and international as well as Belgian policy documents that promote ICT to foster lifelong learning (Vlaamse Regering 2000; European Commission 2001a; Op den Kamp 2003). However, some scholars remain sceptical, arguing that the digital divide may reinforce the already existing learning divide, as it runs along the same lines of socio-economic class, gender and ethnicity and because lack of interest in e-learning may be of greater importance than overcoming these barriers (Gorard et al. 2000; Gorard 2003; Reynolds et al. 2003; Selwyn & Gorard 2003; Gorard & Selwyn 2005; Selwyn et al. 2005).

There is a consensus that socio-economic level is one of the major factors implicated in the digital divide (Korupp & Szydlik 2005; Organisation for Economic
Co-operation & Development 2002b; Selwyn et al. 2005), though different studies indicate that access to computers and the use of ICT should not be confused (Chaudhuri et al. 2005). Yet, the digital divide cannot solely be attributed to socio-economic background and a gender gap has been observed (Attewell 2001; Losh 2004; Joiner et al. 2006). Gender seems to mediate effects of socio-economic background on computer use (Bozionelos 2004), but there seems to be less convergence of research results to this respect. Based on the 1997, 2001 and 2003 German Socio-Economic Panel, Korupp & Szydlík (2005) found that the gender gap, while still important, is slowly closing. Analysis of data from the National Science Foundation and the General Social Survey in the USA over a longer period of time show that the gender gap in computer ownership is closing, but persists in some work-based computer use (i.e. clerical work). Women have increased their computer and Internet access over the last decades, but men (and the well-educated) have increased access and use even more (Losh 2004). Bernier and Laflamme (2005) in their Canadian study of 633 adults in 2003, confirm the closing of the gender gap and found that age, more often than gender, is a discriminating variable in terms of Internet use. An additional argument for the closing of the gender gap is that studies involving children found that children’s self-perception as a computer user is not governed by their gender as much as by other variables (e.g. Mercier et al. 2006). Gorard and Selwyn (2005) also argue that gender needs to be considered in association with other characteristics such as belonging to skilled socio-economic groups, marital status and age.

On the other hand, there is evidence for a persisting digital divide, based on gender, mediated through personal factors, linked with socialization. Based on an overview of research of the last 20 years, Cooper (2006) points to the manifestations of the digital divide in terms of gendered patterns of engagement with and ownership of computer technology. He specifically highlights the persistence of females’ computer anxiety, deeply rooted in socialization patterns of boys and girls. Computer anxiety may lead to differences in computer attitudes and performances.

As Joiner et al. (2006) conclude, the interaction between gender and technology is complex, being mediated by different factors including status and identity. Moreover, as Price (2006) claims there may be a publication bias insofar that papers reporting a significant difference in performance are more likely to get published that those who do not report significant differences. She concludes that there is a need for more nuanced analytic work on this theme (Price 2006). Indeed, there is growing awareness that there may be more variations within in each gender than between genders (Mercier et al. 2006). Therefore, the attention is shifting towards personal dimensions, including motivation and anxiety that seem to influence performance (Brosnan 1998). Women are believed to have more negative attitudes towards computers and less positive experience leading to increasing computer anxiety compared with men. This is confirmed in a Flemish (Belgian) study, based on data from 2001, in which Broos (2005) found that women have more negative attitudes towards computers. Computer anxiety is significantly linked with self-perceived computer experience, but this effect appears to be different for women and men: computer experience has a positive impact on decreasing computer anxiety for men, but a similar effect was not found for women. Women seemed to need more time to appreciate a new medium and become positive about ICT use. Moreover, more experience was accompanied by a feeling of less anxiety for men, but not for women. Ong and Lai (2006) confirm these findings and claim that men were more willing to use e-learning. The positive attitude for men may be influenced by the perception of its usefulness, while women were more influenced by their lower perceptions of computer self-efficacy and ease of use.

Consequently, there is a growing consensus that more research is needed in order to gain better understandings of the complexities of the digital divide. These studies should not only look at computer access but also focus on skills and usage (Van Dijck 2006). They should also look at anxiety and motivation, as these personal factors are linked with gendered differences in computer use (Brosnan 1998; Cooper 2006). In doing so, one needs to take into account situational factors that influence these personal characteristics (Huang 2002; Koper & Tattersall 2005; Zheng & Yano 2007). German research for instance shows that the presence of children, age 12 years and older, has positive effects on computer use of their parents and their presence seems to make up in large parts for the purchasing power of the parents (Korupp & Szydlík 2005). A study of transnational families shows how gender and age barriers disappear in the face of strong motivation; in this case, parents
wishing to communicate with their children when they are overseas (Wilding 2006). Recent studies point to the crucial role of social support by peers (Henning & Van der Westhuizen 2004), by parents and especially mothers (Jung et al. 2005) or by the Internet community itself (Hlebec et al. 2006). The importance of the larger context is also illustrated by older research in Romania, showing no gender gap, even when women reported limited access or computer experience (Durndell et al. 1997).

It can be noted that often several years lie in between the publications and the data on which the research is based, which may be problematic in an area which is evolving rapidly. We may nevertheless conclude that the use of ICT in adult education is not to be taken for granted. Consequently, any program designed for adult e-learning should consider carefully if and how the use of ICT may exclude specific subgroups of its targeted population and the need to address issues of the digital divide. This is particularly the case when these programmes address women or groups with a low professional status, as reports of participation in postcompulsory education seem to be lower in less prestigious occupational groups and working-class women are too often ignored or made invisible (Jackson 2003; Selwyn & Gorard 2003).

The case of Belgian family day care providers

Family day care (FDC) providers in Flanders (Belgium) are an interesting case to study the potential and problems with adult e-learning. For FDC providers, their workplace is their home and research in this respect is scarce (Latchem 2006). In many countries, FDC has increased since the 1980s, and this workforce has traditionally been recruited among groups at risk from unemployment (Mooney & Statham 2003; Vandenbroeck 2003). It is a group marked by low salaries, low status and an ambivalent position towards professionalism (Cameron et al. 2002). There is a substantial international consensus that FDC is a low-status profession, although this does not necessarily imply that FDC providers have low socio-economic status (SES) (Mooney & Statham 2003; Doherty et al. 2006). This is particularly salient in Flanders where FDC providers have the largest share of the coverage in child care in Europe (Organisation for Economic Co-operation and Development 2001). It is a highly gender-segregated workforce: less than 0.2% is male (Peeters 2003). As no formal education is required, Organisation for Economic Co-operation and Development 2002a) have urged Belgian policymakers to address their professionalism. This is the case for FDC providers that have subscribed to a FDC scheme (n = 7449 in 2004) as well as for those who are independent and self-employed (n = 1259) (Kind en Gezin 2005). As a result of the OECD report, Flemish policy wishes to enhance the access of FDC providers to adult education. A recent small-scale qualitative study, interviewing 40 FDC providers in Flanders suggests this policy is welcomed by the providers themselves, although time and distance remain important barriers (De Meyer 2006). Consequently, e-learning may have substantial benefits, provided that it is possible to overcome the digital divide in this group.

The Resource and Research Centre for Early Childhood Care and Education and the governmental organization ‘Kind en Gezin’ (Child and Family) develop innovative training for FDC providers, including e-learning (Resource and Research Centre for Early Childhood Care and Education 2006). Yet, Belgium ranks slightly below the European average of lifelong learning (Eurostat 2006b) and the gender gap appears to be larger than in the rest of the EU (Eurostat 2006a). In contrast, however, Belgium ranks slightly above the European average in private use of the Internet and in the share of households having a broadband connection (Eurostat 2006c, d). An exploratory study was necessary to examine the risks associated with the use of ICT, as well as FDC providers’ attitudes towards computer use and e-learning, in order to assess to what degree technology may be integrated in FDC providers’ cultures and beliefs (La Velle & Nichol 2000). As this workforce is almost entirely female, this study may help understanding variations within this gender group (Mercier et al. 2006) and by looking at interconnections of demographic factors (e.g. education), personal factors (e.g. motivation and anxiety) and situational factors (e.g. social support), it may contribute to the necessary development of theory and conceptual definitions (Van Dijck 2006).

Method

The study is based on a survey carried out between January and April 2006 in the Flemish Community of
Belgium. A selection of 1000 FDC providers was made. Three FDC organizations were selected for their diversity (geographical diversity, diversity in size of the organization, and urban as well as rural organizations). From the FDC providers subscribed to these organizations, a random selection of 500 was carried out. The additional 500 were randomly selected from a listing containing all 1259 independent FDC providers (who are not a member of any organization). The response on the 1000 questionnaires was 551 (55.1%). The sample consisted only of women, their mean age was 44 years and they had on average 12 years experience as a FDC provider. See Table 1 for a more detailed sample description.

The questionnaire focused on demographic data (age, education, history as FDC provider, career history, family context), computer access and use and perceived computer skills. FDC providers may be considered a low-status profession, but this does not imply a statement on SES. Social stratification is usually measured using occupation-based indicators, of which income and education seem to be the most valid (Mueller & Parcel 1981). In the Belgian case, income is seldom used and education is generally accepted as proxy for SES (e.g. Elchardus & Smits 2006; Van Dam et al. 2006). According to a meta-analysis of literature in the Belgian case, education is a strong proxy for SES (Reynders et al. 2005). The sample description in Table 1 shows that the sample cannot be defined as low SES, but represents a variety in SES, similar to that of the total Belgian population.

Fourteen perceived computer skills were evaluated on a 5-point Likert scale, based on previous studies where 1 = no skills at all, and 5 = highly skilled. As Garland and Noyes (2004) suggest, they include perceived skills in email, Internet, computer games, word processing, databases and spreadsheets. Additionally, as the European Computer Driving Licence (Steyaert 2000) suggests, perceived knowledge of the operating system, and perceived skills with Internet search engines and chat facilities (e.g. MSN) were added. In so doing, the list also covers the items suggested by Lupo and Erlich (2001). From these 14 scores, a general index was computed for each respondent (Cronbach’s alpha = 0.940). Individuals were assigned to three groups: low (1.0 < x < 2.0), medium (2.1 < x < 3.5) and high perceived digital skills (3.6 < x < 5.0), based on Van Dijck and Hacker 2003).

Also more personal factors were measured, including perceived anxiety and motivation to learn computer skills in the non-user population, and perceived possibilities for support. The questions regarding these factors were generally inspired by the Computer Anxiety Rating Scale (Heinssen et al. 1987; Brosnan 1998) and included general items on motivation such as ‘If you never used a computer, would you like to learn working with it?’ and ‘Would you consider learning to work with the computer to be useful for you?’ The questions on computer anxiety included questions such as ‘Do you believe it is difficult for you to learn to work with the computer?’ The questions on perceived barriers were based on Selwyn and Gorard (1999), Stanley (2003) and Everiss and Dalli (2003) and comprised questions on perceived costs and time. An ‘individual anxiety index’ (Cronbach’s alpha = 0.652) and an ‘individual motivation index’ (Cronbach’s alpha = 0.703) were computed.

Data were processed with SPSS, including ANCOVA procedures with computer access, computer use and computer skills as dependent variables.

Table 1. Sample description (n = 551).

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Age (years)</td>
<td>44.01</td>
<td>9.64</td>
</tr>
<tr>
<td>Years since end of formal schooling</td>
<td>25.65</td>
<td>10.64</td>
</tr>
<tr>
<td>Years working in family day care</td>
<td>12.03</td>
<td>8.71</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below secondary</td>
<td>24.7%</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>54.5%</td>
<td></td>
</tr>
<tr>
<td>Above Secondary</td>
<td>20.8%</td>
<td></td>
</tr>
<tr>
<td>PC experience at previous work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>19.5%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>80.5%</td>
<td></td>
</tr>
<tr>
<td>Received adult PC training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18.3%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>81.7%</td>
<td></td>
</tr>
</tbody>
</table>

Results

PC access and use

Reported access to computers in our sample is high: 88.2% of the respondents claim to have a computer at home and 93.4% of them also have Internet access. A total of 67.5% of the respondents report they regularly use the computer, a significantly higher number than the Flemish average ($\chi^2 = 32.500, P = 0.000$). FDC providers without PC at home are on average 52.5 years old.
PC skills

The perceived PC skills of users (n = 333) varied from 1 to 4.93, mean = 2.77, sd = 0.99, where 1 = unskilled and 5 = highly skilled. An ANCOVA of the perceived PC skills as dependent variable and including education, previous work experiences with a PC, previous adult training in PC use and age as independent variables showed that only age as an independent variable was interrelated with PC skills (F = 20.685, P = 0.000). Indeed, the youngest age group (up to 30 years of age) has significantly more PC experience and higher PC skills (F = 8.08, P = 0.000). The correlation however, is not significant for the older age groups. The adjusted $R^2$ of the total model was 0.118, suggesting that other variables need to be included to explain individual variation in PC skills.

Anxiety and motivation

We also studied reported anxiety and motivation of the 32.5% non-users (n = 150). The anxiety index varied from 1.00 to 4.00 (mean = 2.33, sd = 0.60), where 1 = highly confident and 5 = highly anxious. The motivation index varied from 1.00 to 5.00 (mean = 3.08, sd = 0.95), where 1 = not motivated and 5 = highly motivated. In general, the non-users showed rather low levels of anxiety and higher levels of motivation. An ANCOVA of anxiety as dependent variable was not significant (F = 1.631, P = 0.133), suggesting that reported anxiety cannot be explained by the independent variables in this model: previous formal education or adult education in PC use, previous work experiences and age. The same results have been obtained for the motivation index (F = 2.053, P = 0.054): (i) reported motivation also cannot be explained by educational level; (ii) adult education in PC use; (iii) previous work experiences involving PC use; and (iv) age in the non-users sample. Anxiety and motivation in our sample need to be considered as personal variables that may not run along traditional (demographic) lines of the digital divide. A Pearson Correlation showed that there is only a very weak relation between anxiety and motivation ($r^2 = 0.215$), indicating that they may be interconnected, yet anxiety and motivation cannot be considered as synonymous or as one variable. Moreover, our data suggest that motivation and anxiety do not run along traditional lines of age, education or previous work experience.

Social support

Almost the entire sample has some sort of support in their direct environment: 97.2% of the PC users and 95.1% of the non-users have someone they can turn to in case of problems. Most often (87.7%) this is someone from their household: husband and/or children. In the other cases it may be a friend, relative or neighbour. Focusing on the 79 non-users of computers in the sample with low motivation, we find that in 33 cases...
(almost half of the non-users with low motivation) children are the only form of social support reported by the respondents and additionally 20 (one quarter of the non-users with low motivation) responded that both their children and their partner are a support they can turn to. Yet, the presence of children also seems to be influencing motivation. Respondents without children are significantly more present in the group of low-motivated women in our sample ($\chi^2 = 7.111, P = 0.008$). Moreover, when the respondents of the low-motivated women do have children, these seem to be older than the children of the higher motivated respondents ($t = -16.415, P = 0.000$). In contrast to the results on motivation, no significant relation was found between the presence of children and anxiety.

Recent evolutions in the population

One of the initial concerns of the study is accessibility of e-learning programmes for this target group in the near future. As the digital divide may be evolving rapidly over recent years, it may very well be that data on the profile of the actual population will soon be outdated. We separately studied the profile of respondents who became a FDC provider within the last 5 years ($n = 154$) and compared these data with FDC providers with more years in service ($n = 381$) in order to estimate to what extent the population is changing in respect to PC access, use and skills. See Table 2 for a more detailed description. Recent FDC providers (i) have significantly more access to PC ($\chi^2 = 8.351, P = 0.004$); (ii) use the PC more ($\chi^2 = 23.078, P = 0.000$); (iii) have more previous working experiences involving PC use ($\chi^2 = 97.689, P = 0.000$); (iv) have followed more PC training as adults ($\chi^2 = 95.345, P = 0.000$); and (v) reported better PC skills overall ($t = 4.449, P = 0.000$). In contrast with these results, the reported anxiety and motivation of non-users does not differ significantly between recent and older FDC providers. This suggests that the digital divide is persistent, but rather in use than in access to the PC: 6% of the recent FDC providers have no PC in the home and 19% of them do not use the computer. As in the total population, non-users in the subgroup of recent FDC providers (i) are older than users in this subgroup ($t = -9.284$); (ii) have less previous working experience involving PC use ($\chi^2 = 67.749, P = 0.000$); (iii) have less previous training in PC use ($\chi^2 = 95.345, P = 0.000$); and (iv) lower qualifications.

Table 2. Recent FDC providers (less then 5 years) compared to FDC providers with longer years of experience.

<table>
<thead>
<tr>
<th></th>
<th>Less than 5 years Mean</th>
<th>More than 5 years Mean</th>
<th>Test value</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 154</td>
<td>n = 381</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC skills of users</td>
<td>3.01 1.01</td>
<td>2.62 0.95</td>
<td>$t = 4.166$</td>
<td>0.000</td>
</tr>
<tr>
<td>Anxiety of non-users</td>
<td>2.29 0.64</td>
<td>2.34 0.59</td>
<td>$t = -0.369$</td>
<td>0.715</td>
</tr>
<tr>
<td>Motivation of non-users</td>
<td>3.21 0.93</td>
<td>3.08 0.95</td>
<td>$t = 0.675$</td>
<td>0.506</td>
</tr>
<tr>
<td>Age</td>
<td>36.03 8.5</td>
<td>47.26 7.89</td>
<td>$t = -16.415$</td>
<td>0.000</td>
</tr>
<tr>
<td>No. of years graduated</td>
<td>15.97 9.4</td>
<td>28.29 8.77</td>
<td>$t = -15.791$</td>
<td>0.000</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>19.2% 27.1%</td>
<td></td>
<td>$\chi^2 = 9.711$</td>
<td>0.008</td>
</tr>
<tr>
<td>Middle</td>
<td>54.3% 55.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>26.5% 17.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC at home</td>
<td>Yes 94.2% No 5.8%</td>
<td>Yes 86.1% No 13.9%</td>
<td>$\chi^2 = 8.351$</td>
<td>0.004</td>
</tr>
<tr>
<td>Internet access</td>
<td>Yes 88.2% No 11.8%</td>
<td>Yes 84.1% No 15.9%</td>
<td>$\chi^2 = 1.957$</td>
<td>0.162</td>
</tr>
<tr>
<td>PC Use</td>
<td>Yes 80.8% No 19.2%</td>
<td>Yes 61.8% No 38.2%</td>
<td>$\chi^2 = 23.078$</td>
<td>0.000</td>
</tr>
<tr>
<td>Previous working experience involving PC use</td>
<td>37.7% 62.3%</td>
<td>11.8% 88.2%</td>
<td>$\chi^2 = 97.689$</td>
<td>0.000</td>
</tr>
<tr>
<td>Previous PC use in adult education</td>
<td>27.0% 73.0%</td>
<td>15.1% 84.9%</td>
<td>$\chi^2 = 16.176$</td>
<td>0.000</td>
</tr>
</tbody>
</table>

1 $n$ (users, less than 5 years) = 117; and $n$ (non-users, more than 5 years) = 209.
2 $n$ (non-users, less then 5 years) = 24; and $n$ (non-users, more then 5 years) = 122.
(χ² = 20.292, P = 0.000). Only one recent FDC provider not using the PC did not have support within her home. This suggests that there will remain a group of FDC providers that may drop out when e-learning programmes are developed, but that this group will become significantly smaller in the near future.

Discussion

Scholars in this field have expressed the concern that e-learning may contribute to the existing divide in adult education, as patterns of learning and non-participation in terms of age and class may be repeated in terms of access to the technology itself (e.g. Selwyn & Gorard 2003). The concern is particularly salient in the case of low-paid, low-status and gendered jobs. Yet, inconsistent results on the gender gap in ICT have indicated that the relationship between gender and technology is more complex and consequently more studies are needed that explore variation within the group of women. We studied a gendered professional group with low status and a historically ambivalent attitude towards professionalization, but also – more recently – with a growing consensus among policy and the field that there is a need for training. Our results only partially contribute to this concern, though they suggest that there is a persistent divide between users and non-users, as well as in perceived PC skills; but this divide is not explained by traditional variables such as education. Our findings suggest, on the contrary, that the only demographic variable explaining the divide in our female sample is age: the youngest age group having some advantages. No other variables seem to have much influence and as far as age is concerned, this influence is only clear when comparing respondents below 30 years with those above this age. This indicates that the digital divide may be changing and is now less embedded in tradition or history and more influenced by individualized personal contexts. We found that both motivation and anxiety are interrelated but distinct personal factors, influencing PC use, that do not run along these demographic lines. They consequently may be considered individual variables, although they are influenced by the context of these individuals, as motivation is clearly mediated by the family context. The presence of children seems to be an important factor: (younger) children in the home enhance the probability of a PC in the home. This does not necessarily imply that their mother also makes use of this computer, but they enhance the motivation to do so and they also offer a significant role in social support in case of problems or questions. These findings suggest that indeed, as Joiner et al. (2006) point out, that one should acknowledge that technologies arise in the context of existing social relations, but also that this does not necessarily mean a reproduction of these forms of relationships. Traditionally, studies suggested that higher educated parents may tend to support and encourage their children more in computer use (Looker & Thiessen 2003; Jung et al. 2005) and in other cases social support was narrowed down to peer support (Henning & Van der Westhuizen 2004). Our study suggests more reciprocal and less reproductive influences: individuals without PC experience very often live in an environment that has this experience and children may very well support and encourage their parents.

The findings may contribute to the hypothesis that the divide may continue to exist, but may become smaller over the next few years: 25% of the non-users have a high anxiety index, whereas 70% have average anxiety. Similarly, of the non-users 25.5% are highly motivated to enhance their PC skills; 54.5% have an average motivation and 20.1% have a low motivation. These findings suggest that three out of four non-users may become users within a programme that offers adapted support. Programme developers that wish to address this group might wish to take the children into account from this perspective. This study suggests that the mere presence of children may not suffice as a trigger to use the computer, but that the motivation and support they can offer may be taken into account or even encouraged. Moreover, recent FDC providers have significantly more PC experience than former cohorts. Consequently, one needs to be very cautious when analysing data that are based on surveys of some years back, as the phenomena under study may be subject to rapid changes.

There is a case for growing optimism in the possibilities of e-learning in less prestigious occupational groups that wish to enhance their professionalism. Access to PC or the Internet may cause less concern in the future, but there remains a digital divide in PC use that needs to be taken into account when setting up educational programmes for this group. Further research is needed to study how groups with lower PC skills make actual use of e-learning programmes, taking into account variations within a gendered group and moving on from access and performance to the differences and
similarities within gendered groups in dealing with different tutoring styles (Price 2006) and communication styles (Barrett & Lally 1999; Heemskerk et al. 2005). This is taken up in the ongoing pilot phase of the Flemish project in 2007–2008.

Our study is subject to several limitations and the usual caution is needed when it comes to generalizations. PC skills were not actually measured, but reported by the respondents and data on income were not available. Consequently, we could not study class as predictor for success (Nesbit 2006). Qualitative data on the family context would also have contributed to a more nuanced analysis of the conditions for social support and their possible influences on anxiety and motivation. Nevertheless, it seems that the divide is running less along traditional lines. Consequently personal factors, including motivation and anxiety gain importance. It may be beneficial to look at these individual contexts, such as the PC skills of peers and household members, including the children’s perspectives. This is especially important in programmes that target home-based learning and learning where the workplace and the home are shared. E-learning programmes set up for the adult education of heterogeneous groups in terms of PC use, may benefit from taking into account the possibilities of this informal social support and further research on these informal support network is needed.

Acknowledgements

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