

## Examining social inclusion and social capital among adult learners in blended and online learning environments

*Céline Cocquyt*

Vrije Universiteit Brussel, Belgium (celine.cocquyt@vub.ac.be)

*Nguyet A. Diep*

Vrije Universiteit Brussel, Belgium (diep.anh.nguyet@vub.ac.be)

*Chang Zhu*

Vrije Universiteit Brussel, Belgium (chang.zhu@vub.ac.be)

*Maurice De Greef*

Vrije Universiteit Brussel, Belgium (info@arteduc.nl)

*Tom Vanwing*

Vrije Universiteit Brussel, Belgium (tvwing@vub.ac.be)

### Abstract

*New learning spaces and learning formats affected the learning and education of adults. In this respect, digitalisation is believed to reduce social exclusion. Moreover, adult education, social inclusion and social capital are positively related among adults. Therefore, this questionnaire study examines how adults who are engaged in online and blended learning perceived change in social inclusion and social capital. We conceptualised social inclusion as social participation and social connectedness, and social capital as bonding and bridging ties. In the case of blended adult learners, our results show positive perceptions of social inclusion and social capital. Those perceptions are less positive among the online adult learners. In both cases, non-natives experience a higher increase in social inclusion and social capital than natives. Hence, online and blended learning holds advantages for adults particularly non-natives: it enhances social inclusion and social capital.*

Keywords: adult education; online and blended learning; digitalisation; social inclusion; social capital

## Introduction

Digitalisation has impacted the educational landscape. Hence, adult education practices are affected by the introduction of technologies. In this respect, online and blended learning (OBL) have been put to the fore. The introduction of OBL in education yields substantial benefits for adult learners because of its flexibility, accessibility and affordability (Selwyn, Gorard, & Williams, 2001) and improved pedagogy (Graham, 2004).

Simultaneously, policy-makers are promoting adult education due to its effect on *social inclusion*. The OECD examined social outcomes of learning under the form of civic and social engagement (Desjardins & Schuller, 2006). The European Council (2010) also emphasised the social dimension of education and training: adult education fosters social cohesion, active citizenship, upward social mobility, and creates active inclusion and enhanced social participation. In addition, UNESCO (2015) released the Incheon Declaration striving towards inclusive and equitable quality education and lifelong learning for all. This declaration underlines the undisputable role of learning throughout the lifespan for obtaining a knowledge-based economy (Lisbon European Council, 2000) and also for 'promoting democracy and human rights and enhancing global citizenship, tolerance and civic engagement' (UNESCO, 2015, p. 5).

Next to social inclusion, adult education is interconnected with *social capital*. Field (2005) indicates that people's social relations, i.e. their social capital, play a vital part in their capacity for learning. Therefore, social capital and participation in adult education are positively associated.

Traditional forms of adult education have shown to improve social inclusion and social capital (De Greef, Verté, & Segers, 2014; Field, 2005; Tett & MacLachlan, 2007). But the influence of online learning spaces on adults' social inclusion and social capital has not been scrutinised extensively. In this digital age, it is not yet defined if and how digitalisation in adult education can serve as a solution for societal problems, such as social exclusion. In this respect, it is valuable to understand how vulnerable and disadvantaged adults are affected by participation in innovative adult education practices, such as OBL.

Therefore, this study examines how participation in two cases of technology-based learning, online and blended learning, is related to adult learners' perceived social inclusion and social capital change. Furthermore, this study focusses on the perceptions of vulnerable adults such as non-natives, low-educated, unemployed and older people. This is of utmost importance because our contemporary society is still characterised by poverty and social exclusion threatening the aforementioned groups of adults (Eurostat, 2010).

## Digitalisation in adult education: impact on social inclusion and social capital

The impact of adult education has primarily been studied from an economic-instrumental point of view, examining the way adults' educational participation contributes to the development of a knowledge-based economy and an increase in human capital (Fejes & Olesen, 2010). Additionally, adult education also plays a role in strengthening the learning society (Jarvis, 2004). Nowadays, adults are considered as responsible for their own learning trajectories in order to keep up with the demands of society (Illeris, 2003). Yet, participation in adult education reflects a Matthew principle: those in the most advantaged positions participate more and thus benefit more (Boeren, 2009). Therefore, vulnerable adults have fewer chances to participate, while they are in need of increasing

their human and social capital. In this respect, the following sections review the connection between adult education and social inclusion on the one hand and between adult education and social capital on the other hand.

### *Adult education and social inclusion*

#### *Social inclusion: conceptualisation*

Not only policy-makers, but researchers worldwide connected adult education to *social inclusion*. Generally, social inclusion is described in contrast with social exclusion, which has predominantly been aligned with poverty and disadvantages of people living on the margins of society (Percy-Smith, 2000). Burchardt, LeGrand, and Piachaud (1999, p. 230) indicated that:

An individual is socially excluded if (a) he or she is geographically resident in a society but (b) for reasons beyond his or her control, he or she cannot participate in the normal activities of citizens in that society, and (c) he or she would like to participate.

Furthermore, social exclusion is a multidimensional concept (Burchardt et al., 1999; Percy-Smith, 2000), for example referring to economic exclusion, service exclusion or exclusion from social relations (Gordon et al., 2000). The aforementioned descriptions show that social exclusion has mainly been defined by the lack of participation in certain activities. On the contrary, social inclusion implies that citizens fully participate in society (World Bank, 2016). In addition, affective components of social inclusion, being belongingness, togetherness or connectedness, have been brought to attention (Abrams, Hogg, & Marques, 2005; Allman, 2013; Grieve et al., 2013). Nevertheless, there is no consensus on the definition of social inclusion, because it has been operationalised through a wide array of dimensions such as health, well-being, civic and social engagement, citizenship and political participation (Desjardins & Schuller, 2006; Field, 2012).

Focusing on the inherent social element of social inclusion, in this study, social inclusion is defined as the combination of social participation and social connectedness. This conceptualisation takes into account the multidimensionality of social inclusion. It captures not only its participatory function, but the emotional meaning as well, respectively referring to ‘the participating citizen’ and ‘the relational citizen’ (Vandenabeele, Reyskens, & Wildemeersch, 2011). Both dimensions, participation and connectedness, are included in the social inclusion model of De Greef et al. (2014), bearing a functional (e.g., participation) and emotional (e.g., connectedness) role. *Social participation* reflects the *behavioural dimension* of social inclusion and is defined as ‘the extent to which a subject takes part in different social networks and other activities in society’ (Ekström, Ivanoff, & Elmstahl, 2013, p. 459). *Social connectedness* represents the *affective dimension* of social inclusion and refers to a ‘subjective awareness’ (Lee & Robbins, 2000, p. 484) or ‘self-evaluation of the degree of closeness between the self and other people, the community, and society at large’ (Lee, Dean, & Jung, 2008, p. 415).

#### *The relationship between adult education and social inclusion*

According to De Greef et al. (2014) adult learners experience an increase on social inclusion after participation in adult education courses: 41% of the participants perceived an increase in participation and connection. Field (2012) reported that social and civic engagement is closely associated with participation in adult learning. Adults indicated that they more often go out to pubs, clubs and/or the cinema as a consequence of their

participation in adult learning (Tett & MacLachlan, 2007). In other words, they perceived an increase in social participation. Moreover, engagement in family literacy programs showed that disadvantaged women are provided with more than just academic skills (Prins, Toso, & Schafft, 2009). They were offered opportunities for getting out of the house more often and educational participation satisfied their need for affiliation and connectedness (Prins et al., 2009). As a result, it seems that adult education enhances social inclusion.

However, the effects of participation in adult education regarding social inclusion can differ. De Greef et al. (2014) found that groups with different ethnic backgrounds perceive differences in the rate of increase in social inclusion: non-natives report higher increases with respect to going out and meeting people. People who are living together and low-educated adults also report more positive changes in their social inclusion (De Greef et al., 2014). Furthermore, the Benefits of Lifelong Learning-project (BeLL) (Manninen et al., 2014) reports that adults with lower educational background, females and older adults experience more positive changes to social engagement. Additionally, disadvantaged individuals, such as low-educated, divorced, ethnic minorities or unemployed, benefit more from their participation in adult education (Panitsides, 2013). For example, the feeling of being a member of a community has been enhanced (cf. social connectedness). Finally, educational participation is positively related to social participation among older adults (De Donder et al., 2014). Hence, previous research indicates that vulnerable adults, like ethnic minorities, low-educated, unemployed, divorced or older adults, experience an increase on social inclusion due to their participation in adult education.

#### *Adult education and social capital*

##### *Social capital: conceptualisation*

‘Social capital’ got renewed attention at the end of the 20<sup>th</sup> century. Authors such as Bourdieu (1980), Coleman (1988) and Putnam (2000) have employed the notion of social capital to examine societal dynamics. First, Bourdieu (1980) describes social capital, next to economic and cultural capital, all of which are important to achieve social mobility. According to Bourdieu, social capital consists of the resources arising from the possession of a durable social network. Next, Coleman (1988) emphasises the functional and productive role of social capital, since it produces benefits to individuals. In contrast, social capital is a collective good, consisting of social networks, norms of reciprocity and trust among citizens (Putnam, 2000).

Bourdieu and Coleman refer to the individual benefits of social capital, whereas Putnam describes social capital as a benefit for the society or community. Additionally, Bourdieu and Coleman stress the importance of social networks in building social capital, which could be described as structural social capital. In contrast, Putnam explains the importance of values, norms, trust and reciprocity, which are attitudinal components of social capital. Williams (2006) follows the structural approach and proposes an instrument to measure social capital based on online or offline social networks. In the present study, the individual-structural approach to social capital is employed, because of the focus on an individual’s social networks which produce important resources. Consequently, the following definition of social capital is proposed: ‘the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition’ (Bourdieu & Wacquant, 1992, p. 119).

Furthermore, social capital includes two different processes, namely bonding and bridging ties (Putnam, 2000). *Bonding social capital* consists of close personal relationships among members of the same group and refers to homogeneous networks. On the contrary, *bridging social capital* concerns outgoing social relationships, which build bridges between different societal groups. Therefore, bridging social capital pertains to heterogeneous networks. Granovetter (1973) describes bridging social capital as ‘weak ties’ and bonding social capital as ‘strong ties’. Weak ties are especially valuable in retrieving information normally not available to people in their immediate social network, i.e. bonding social capital.

#### *The relationship between adult education and social capital*

The interconnectedness between adult education and social capital has been outlined by Field (2005), stating that social capital influences adult learning, which in turn affects social capital. The relationship between adult education and social capital is reciprocal because social capital has an impact on educational participation and achievement and at the same time participation reinforces new and wider social networks. In other words: ‘Social capital is important for learning, and learning is important for social capital’ (Field, 2005, p. 110). One strand of researchers investigates how social capital influences adult learning (e.g., Dufur, Parcel, & Troutman, 2013; Strawn, 2003). Other studies emphasise the change in social capital arising from educational participation. A characteristic of social capital development is building new social networks, such as new friendships (Manninen et al., 2014; Panitsides, 2013). This type of social capital refers to bridging ties. With respect to bonding ties, impact on getting help from friends has been described (Tett & MacLachlan, 2007). Moreover, participation in community-based adult education supports the development of social capital and can even contribute to the recovery of lost social capital (McIntyre, 2012). Hence, social capital, consisting of bonding and bridging ties, can be enhanced due to participation in adult education. In accordance with findings on social inclusion, vulnerable adults benefit more with regard to social capital development (Manninen et al., 2014; Panitsides, 2013). Those vulnerable adults (e.g. low-educated, ethnic minorities) indicated that they were able to extend their social network and establish new social relationships. In other words, they have increased their bridging social capital.

#### *The importance of OBL in adult education for social inclusion and social capital*

##### *Online and blended learning*

New technologies and media are continuously reshaping educational practices. Bates (2015) represents the complexity of technology-based learning in a continuum. He identifies three main modes of delivery in education: classroom teaching with no technology, blended learning and fully online learning. In the teaching practice, each delivery mode takes on different forms (Figure 1, p. 82).



enhanced learning with technology as a classroom aid to flipping the classroom and hybrid or flexible learning (Bates, 2015). The latter models start from online learning and only use classroom-teaching when its particular pedagogical features have added value. Nonetheless, blended learning often takes the form of classroom-type learning. Lectures are recorded and put online or a learning management system is used in order to create a replica of the physical classroom (Bates, 2015). In our study, blended learning is considered as both models: classroom-type blended learning as well as the more innovative approaches. According to Rovai and Jordan (2004) blended learning would result in a more solid learning experience compared to traditional or fully online courses. As a consequence, online and blended learning are considered as fundamentally different from each other. Moreover, comparing blended and online approaches to face-to-face instruction, a meta-analysis showed that the effect size for blended learning was significantly larger (Means, Toyama, Murphy, & Baki, 2013).

#### *Relating OBL to social inclusion and social capital*

Warschauer (2003, p. 9) premises that ‘the ability to access, adapt and create new knowledge using new information and communication technology is critical to social inclusion in today’s era’. However, the benefits of OBL regarding social inclusion and social capital are scarcely examined. Nevertheless, there are indications that participation in OBL environments influences social inclusion and social capital development among learners. Social connectedness can be derived from online social interactions using the social network site Facebook (Grieve et al., 2013). Additionally, Lu, Yang, and Yu (2013) provided evidence that online social capital positively predicts learners’ satisfaction and learning outcomes, revealing the relationship between social capital and online learning. Among university students, participation in computer-supported collaborative learning, as a form of blended learning, enhances social capital (Mebane et al., 2008). In virtual communities, Facebook use and online social presence contribute to bridging social capital (Oztok et al., 2015; Steinfield, Ellison, & Lampe, 2008). Nevertheless, the relationship between participation in OBL and changes in social inclusion or social capital has not been extensively studied among adults in formal educational contexts.

Previous research does confirm that online (collaborative) learning brings about positive effects on learners’ satisfaction, learning outcomes and quality of the learning experience (Inayat, Amin, Inayat, & Salim, 2013; Kang & Im, 2013). However, there is a lack of studies concerning socio-demographic differences as to social inclusion and social capital development in OBL environments. It seems that online learning is not experienced in a similar way by different groups of learners. Ke and Kwak (2013) have found that learners from a minority group have more negative perceptions of online education. Next to this, older learners invest more time online and high-educated learners are less satisfied with online education (Ke & Kwak, 2013). Moreover, females tend to participate more online (Coldwell, Craig, Paterson, & Mustard, 2008), but Paechter and Maier (2010) found no difference in online learning experiences based on gender or age. Nevertheless, males and females may take different approaches to the use of technology, possibly resulting in various online learning experiences (Gunn, McSparran, Macleod, & French, 2003).

#### Problem statement and research questions

Building on the positive relationship between adult education, social inclusion and social capital, this study examines how adult learners perceive that their social inclusion and

social capital have changed since they have started to participate in online and blended courses. The influence of participation in digital learning environments is of special interest for adults risking social exclusion, because digitalisation is believed to reduce social exclusion. Van Dijk and Van Deursen (2014, p. 45) even stated that ‘growing digital media use enables more and better participation in contemporary society’.

The current study examines two cases in which adults are engaged in technology-based learning: the first fully online, the second blended learning. More specifically we provide nuanced understanding of both situations. In the two cases, we study the dynamics of participation in technology-based learning on adults’ social inclusion and social capital. First, we give a general impression of change in social inclusion and social capital perceived by both groups of adult learners. Second, we identify if those perceptions are similar or different among the two groups. Furthermore, we provide in-depth insight of the situation in each case: do we notice differences between subgroups, and if so, which socio-demographic variables are related to the perceived change in social inclusion and social capital? By answering the latter question, we can scrutinize if certain (vulnerable) groups of adult learners perceive higher increases with regard to their social inclusion and social capital.

First, the following research questions are addressed:

1. To what extent do adult learners perceive change in their social inclusion and social capital after participation in OBL?
2. How do the perceptions of change in social inclusion and social capital differ among online and blended adult learners?

Next, these research questions are raised among the two different cases more specifically:

Case 1:

3. What differences are there among online adult learners regarding their perception of change in social inclusion and social capital after participation in online adult learning?
4. Which socio-demographic variables are related to online adult learners’ perceived change in social inclusion and social capital?

Case 2:

5. What differences are there among blended adult learners regarding their perception of change in social inclusion and social capital after participation in blended adult learning?
6. Which socio-demographic variables are related to blended adult learners’ perceived change in social inclusion and social capital?

## Methodology

### *Research context*

The current study presents two cases of adults studying in technology-based courses: the first case represents adults learning fully online, the second concerns blended learning. Both cases differ on several dimensions, but are similar in that they took place in the Flemish-speaking part of Belgium. The case of online learning is provided by the Flemish Employment Agency (FEA). This agency provides VET-related (Vocational and Educational Training) courses, for example through ‘web-learning’. It gives adults the possibility to study vocational skills fully online in a virtual learning environment on their own place and time. The courses are mainly built around learner-content interaction, complemented by learner-teacher interaction under the form of an online coach. In this case, learner-learner interaction is absent. Therefore it matches the less interactive, transmission model of online learning.

The second case consists of adult learners following blended courses in either specific teacher training (ISCED level 6) or secondary adult education (ISCED level 2-4). Six adult education centres (AECs) participated in this study. The organisation of the blended courses differed among the centres and courses, due to the fact that each centre and instructor has an autonomy to decide on the implementation of the online activities. Yet, all online learning activities included learning paths or online collaborative work through wiki’s or discussion forums. Therefore, three types of interactions are realised: learner-content, learner-teacher and learner-learner.

### *Sample*

Adult learners engaged in blended courses in AECs (n=125) as well as those who were enrolled in online ‘web-learning’ (n=161) provided by the FEA, answered the questionnaire at the end of the schoolyear. Table 1 (p. 86) shows the socio-demographic variables of both groups of participants. Among the adults who joined a blended course in an AEC (hereafter referred to as ‘blended adult learners’), 34.4% took part in a specific teacher training and 65.6% followed courses in secondary adult education, of which 54.4% were registered for second chance education. Regarding the learners of online courses provided by the FEA (hereafter referred to as ‘online adult learners’), adults mainly followed courses on ICT, languages and office management. The main socio-demographic difference between both groups is that the online adult learners are primarily unemployed, while most blended adult learners are employed. Additionally, the age groups are more equally distributed among online adult learners compared to blended learners in AECs, who are younger in general. Furthermore, blended adult learners are more often low-educated, while most participants from FEA at least have obtained a secondary degree. Most of the AEC- and FEA-learners are not married, i.e. they are single, unmarried, living together, divorced or widow / widower. Finally, the division of gender and native language is almost equal in both groups, revealing that women and natives are the majority. Yet, almost 20% of AEC online learners do not speak Dutch as a native language. We consider this group as non-natives, since additional socio-demographic information about their country of birth showed that the vast majority of them were not born in Belgium as well.

	Blended courses provided by adult education centres (AEC's) (N=125)		Online courses provided by the Flemish Employment Agency (FEA) (N=161)	
<b>Gender</b>				
Male	40.0%	50	37.9%	61
Female	60.0%	75	62.1%	100
<b>Age group</b>				
-25	22.4%	28	13.7%	22
25-34	39.2%	49	18.0%	29
35-44	20.8%	26	24.2%	39
45-54	17.6%	22	31.1%	50
55+	0.0%	0	13.0%	21
<b>Native language</b>				
Dutch	80.8%	101	86.3%	139
Not Dutch	19.2%	24	13.7%	22
<b>Marital status</b>				
Married	26.4%	33	33.5%	54
Not married	73.6%	92	66.5%	107
<b>Employment status</b>				
Employed	72.8%	91	29.2%	47
Unemployed	11.2%	14	63.4%	102
Outside the labour market	16.0%	20	7.5%	12
<b>Educational attainment</b>				
Lower secondary degree	39.0%	48	14.3%	23
Secondary degree	18.7%	23	42.2%	68
Higher education degree	42.3%	52	43.5%	70

*Table 1:* Participants' socio-demographic variables by course provider.

### *Instruments*

The first section of the questionnaire requested information about the participants' socio-demographic characteristics and background, including: gender, age, ethnicity, marital status, employment, educational attainment, the educational program in which they were enrolled and the provider of the courses.

In the second part of the questionnaire adult learners' social inclusion was operationalised through social participation and social connectedness. Besides this, social capital consists of bonding and bridging ties. First, adult learners were asked to indicate the change in social participation they perceived since they have started the course. The presented items were adjusted from the SIT-instrument's dimension 'participation and connection' of De Greef, Segers, and Verté (2010) (Table 2, p. 87). Thereafter, the change in social connectedness was measured using the social connectedness scale (Grieve et al., 2013) (Table 2, p. 87).

After careful screening of the social connectedness scale, two items have been removed due to interpretation difficulties for both groups of adult learners. Finally, adult learners' social capital has been measured using the scale of Williams (2006) (Table 2, p. 87).

The initial items were evaluated by three experts in the field of adult education. Based on the content validity, one item has been removed from the bonding social capital scale and three from the bridging social capital scale. Finally, all scales were translated into Dutch, using back-translation. An overview of all items is provided in Appendix (p. 25).

Variable	Source	Number of items	Scale	Cronbach's Alpha	Exemplary items
<b>Social inclusion</b>					
Social participation	De Greef, Segers, & Verté (2010)	8	1: this activity has significantly decreased to 5: this activity has significantly increased	.935	Visiting family and relatives Taking part in activities and events in your neighbourhood
Social connectedness	Grieve et al. (2013)	8	1: completely disagree to 5: completely agree	.953	Due to following this course, I feel close to people. Due to following this course, I am able to connect with other people.
<b>Social capital</b>					
Bonding social capital	Williams (2006)	9	1: completely disagree to 5: completely agree	.929	Due to following this course, there are several people I can talk to when I feel lonely.
Bridging social capital	Williams (2006)	7	1: completely disagree to 5: completely agree	.912	Due to following this course, I am interested in things that happen outside of my town.

*Table 2:* Instruments for measuring social inclusion and social capital.

#### *Data collection*

Online and blended learning is not yet common practice in Flemish adult education. Therefore, we had to search for educational organisations who offered online or blended learning to adults. Due to this, convenience sampling was administered to include six adult education centres who offered blended learning. Since the AECs do not organise fully online courses, the FEA was selected as a provider of online education. All adults participated voluntarily in completing the questionnaire, administered electronically in a

computer room of the adult education centres if possible. Otherwise, the participants filled in a paper version of the questionnaire. The involved teachers and researchers supported the learners in case of questions. As for the FEA, the questionnaire was solely distributed through the online learning environment, since there was no physical contact with the learners.

### *Data analysis*

The data from both samples has been merged into one dataset. Initially, the incomplete and unengaged answers were removed. Given that the questionnaire was constructed based on previously validated scales, Confirmatory Factor Analysis (CFA) has been conducted to confirm validity after translation. According to Table 3, (p.12) fit indices on all scales show acceptable values. The reliability of all administered scales is also considered as satisfactory: social participation ( $\alpha=.935$ ), social connectedness ( $\alpha=.953$ ) and bonding ( $\alpha=.929$ ) and bridging ( $\alpha=.912$ ) social capital (Table 2, p. 11). The general dataset offers overall descriptive statistics and is used to test differences between the two cases. Thereafter, statistical analyses, such as Independent Samples *T*-test, one-way ANOVA and MANOVA, were performed on both cases separately using SPSS 23.

Variables	CFI	RMSEA	SRMR
Social inclusion			
Social participation	.958	.125	.037
Social connectedness	.957	.136	.036
Social capital			
	.930	.090	.046

*Table 3: Results of confirmatory factor analysis.*

## Results

### *Perceived social inclusion and social capital of online and blended adult learners*

In addressing the first research question it seems that online and blended adult learners perceive a decrease in social participation ( $M=2.74$ ,  $SD=0.58$ ) and bonding social capital ( $M=2.88$ ,  $SD=0.77$ ). On the other hand, an increase in social connectedness ( $M=3.13$ ,  $SD=0.74$ ) and bridging social capital ( $M=3.16$ ,  $SD=0.79$ ) is reported (Table 4, p. 13). Regarding the second research question, all *t*-tests are significant. This indicates that the two groups differ significantly regarding their perceived change in social inclusion and social capital. Adult learners in both cases perceive a decrease in social participation since they have followed the course, yet blended adult learners report a more negative tendency. Whereas blended adult learners experience an increase with regard to social connectedness, online adult learners are neutral towards change in social connectedness. Blended adult learners perceive an increase in bonding and bridging social capital. In contrast, there are no significant reported changes of social capital among online adult learners due to their participation in the online courses. In addition, the dependent variables are being predicted by the categorical predictor 'group' through MANOVA. Using Wilks' Lambda, there is a significant effect of group on the two dimensions of social inclusion ( $\lambda = 0.88$ ,  $F(2, 283) = 18.08$ ,  $p < .001$ ) and bonding and bridging social

capital ( $\lambda = 0.93$ ,  $F(2, 283) = 10.56$ ,  $p < .001$ ). According to the analyses, the variable 'group' explains 10.2% of the variation in social inclusion and 11.3% in social capital.

Testing variables	General	Blended	Online	Results of <i>t</i> -tests
Social participation	2.74 (.035)	2.56 (.065)	2.87 (.031)	$t(284) = 4.383$ $p < .001$
Social connectedness	3.13 (.044)	3.29 (.052)	3.00 (.065)	$t(284) = -3.289$ $p < .001$
Bonding social capital	2.88 (.046)	3.07 (.056)	2.72 (.066)	$t(284) = -4.026$ $p < .001$
Bridging social capital	3.16 (.047)	3.39 (.052)	2.97 (.069)	$t(284) = -4.833$ $p < .001$

*Table 4:* Descriptive statistics of social inclusion and social capital among AEC blended and FEA online adult learners  $M(SE)^1$

*Case 1: Differences among online adult learners with regard to social inclusion and social capital*

To address the third research question, we explore the extent to which online adult learners differ from each other with respect to perceived change in social inclusion and social capital depending on their socio-demographic background. According to Table 5 (p. 90), non-natives report significantly higher increases in social connectedness ( $t = -3.810$ ;  $p < .001$ ) and bonding ( $t = -3.768$ ;  $p < .001$ ) as well as bridging social capital ( $t = -5.573$ ;  $p < .001$ ). Table 5 (p. 90) shows that the youngest age group differs significantly from the 35 to 44 year olds in their perception of change in social participation ( $p < .05$ ). The latter group experiences the biggest decrease in participating in social activities. Furthermore, age reveals no other significant differences, just like gender, marital status, employment status and educational attainment do not show significant differences among the online adult learners.

Socio-demographic variables	Social participation	Social connectedness	Bonding social capital	Bridging social capital
<b>Gender</b>				
Male	2.93 (.052)	2.98 (.107)	2.73 (.107)	2.96 (.112)
Female	2.84 (.038)	3.02 (.082)	2.72 (.085)	2.99 (.088)
<b>Age group</b>				
-25	3.02 (.122) *	3.23 (.201)	2.89 (.166)	3.10 (.192)
25-34	2.93 (.068)	3.12 (.129)	2.85 (.133)	3.04 (.127)
35-44	2.69 (.071) *	2.94 (.136)	2.69 (.152)	2.96 (.145)
45-55	2.90 (.041)	2.93 (.124)	2.65 (.124)	2.94 (.135)
55+	2.92 (.052)	2.91 (.150)	2.58 (.177)	2.86 (.197)
<b>Native language</b>				
Dutch	2.87 (.032)	2.91 (.069) ***	2.63 (.071) ***	2.87 (.075) ***
Not Dutch	2.89 (.106)	3.60 (.127) ***	3.33 (.128) ***	3.61 (.107) ***
<b>Marital status</b>				
Married	2.85 (.041)	2.92 (.108)	2.69 (.109)	2.96 (.118)
Not married	2.89 (.042)	3.05 (.081)	2.74 (.083)	2.98 (.085)
<b>Employment status</b>				
Employed	2.97 (.035)	3.09 (.114)	2.83 (.120)	3.06 (.117)
Unemployed	2.85 (.044)	2.99 (.085)	2.67 (.087)	2.93 (.093)
Outside the labour marker	2.70 (.115)	2.73 (.168)	2.72 (.146)	3.02 (.156)
<b>Educational attainment</b>				
Lower secondary degree	2.94 (.072)	3.25 (.120)	3.02 (.137)	3.21 (.108)
Secondary degree	2.82 (.054)	2.94 (.121)	2.58 (.113)	2.86 (.123)
Higher education degree	2.90 (.043)	2.98 (.083)	2.76 (.094)	3.01 (.097)

\* Group means significantly differ on  $p < .05$  level \*\* Group means significantly differ on  $p < .01$  level

\*\*\* Group means significantly differ on  $p < .001$  level

Table 5: Group means (SE) among FEA online adult learners.

Subsequently, social inclusion and social capital are predicted based on online adult learners' socio-demographic variables through MANOVA (RQ4). In predicting social inclusion, consisting of social participation and social connectedness, age group and native language are included as categorical predictors. Using Wilks' Lambda, there is a significant effect of native language on social inclusion ( $\lambda = 0.91$ ,  $F(2, 150) = 7.25$ ,  $p < .001$ ). It seems that native language has a significant effect on social connectedness only (Table 6, p. 91).

During the prediction of bonding and bridging social capital, native language is considered as a categorical predictor. Using Wilks' Lambda, there is a significant effect of native language on social capital ( $\lambda = 0.91$ ,  $F(2, 158) = 7.72$ ,  $p < .001$ ). Table 6 (p. 91) shows that native language has a significant effect on both bonding and bridging social capital.

Consequently, for the online adult learners, native language significantly predicts change in social connectedness and social capital, but not social participation. The effect sizes are small to medium (Cohen, 1988).

Dependent variable	Categorical predictor	<i>Df</i> model	<i>Df</i> error	<i>F</i>	Partial Eta Squared
Social inclusion					
Social participation	Native language	1	151	0.697	.005
<i>(R</i> <sup>2</sup> = .087; Adjusted <i>R</i> <sup>2</sup> = .033)					
Social connectedness	Native language	1	151	14.25***	.086
<i>(R</i> <sup>2</sup> = .108; Adjusted <i>R</i> <sup>2</sup> = .054)					
Social capital					
Bonding social capital	Native language	1	159	14.20***	.082
<i>(R</i> <sup>2</sup> = .082; Adjusted <i>R</i> <sup>2</sup> = .076)					
Bridging social capital	Native language	1	159	14.22***	.082
<i>(R</i> <sup>2</sup> = .082; Adjusted <i>R</i> <sup>2</sup> = .076)					

\* *p*<.05, \*\* *p*<.01, \*\*\* *p*<.001 level

Table 6: Results of univariate ANOVA's among online adult learners.

*Case 2: Differences among blended adult learners with regard to social inclusion and social capital*

Next, we examine to which extent the blended adult learners differ from each other concerning perceived change in social inclusion and social capital depending on their socio-demographic background (RQ5). The most prominent result is that the native language of the blended adult learners reveals significant differences on all social outcome variables (Table 7, p. 92). First, non-natives perceive higher increases in social connectedness ( $t=-3.865; p<.000$ ) and bonding ( $t=-2.694; p<.01$ ) as well as bridging social capital ( $t=-3.188; p<.002$ ) compared to native learners. Second, natives tend to indicate that participation in blended adult education decreases their social participation, whereas non-natives are rather neutral on this dimension ( $t=-2.694; p<.01$ ). Third, males and females significantly differ as to social participation ( $t=2.524; p<.05$ ), females perceive a higher decrease in social participation compared to male participants. Next, the youngest age group experiences a higher increase in both bonding ( $p<.05$ ) and bridging social capital ( $p<.05$ ) compared to older adult learners (45-55 year). Fifth, Table 7 (p. 90) shows that married adults indicate a significantly higher increase in their feeling of being socially connected compared to unmarried adults ( $t=2.774; p<.01$ ). Finally, employment status and educational attainment reveal no significant differences among the participating blended adult learners.

Socio-demographic variables	Social participation	Social connectedness	Bonding social capital	Bridging social capital
<b>Gender</b>				
Male	2.74 (.084) *	3.34 (.091)	3.10 (.094)	3.40 (.083)
Female	2.43 (.090) *	3.27 (.063)	3.06 (.069)	3.39 (.066)
<b>Age group</b>				
-25	2.69 (.135)	3.51 (.109)	3.34 (.136) *	3.71 (.121) *
25-34	2.65 (.089)	3.20 (.068)	3.02 (.083)	3.30 (.073)
35-44	2.52 (.139)	3.25 (.133)	3.11 (.115)	3.36 (.121)
45-55	2.21 (.191)	3.27 (.145)	2.80 (.112) *	3.24 (.104) *
55+	N.A.	N.A.	N.A.	N.A.
<b>Native language</b>				
Dutch	2.47 (.069) **	3.20 (.057) ***	3.00 (.064) **	3.31 (.058) **
Not Dutch	2.91 (.159) **	3.69 (.092) ***	3.37 (.088) **	3.72 (.089) **
<b>Marital status</b>				
Married	2.56 (.134)	3.53 (.096) **	3.18 (.078)	3.53 (.083)
Not married	2.56 (.074)	3.21 (.060) **	3.03 (.070)	3.34 (.063)
<b>Employment status</b>				
Employed	2.56 (.073)	3.32 (.059)	3.07 (.060)	3.39 (.059)
Unemployed	2.45 (.215)	3.39 (.164)	3.26 (.211)	3.47 (.205)
Outside the labour market	2.61 (.180)	3.11 (.147)	2.96 (.161)	3.35 (.111)
<b>Educational attainment</b>				
Lower secondary degree	2.56 (.108)	3.37 (.088)	3.19 (.101)	3.47 (.094)
Secondary degree	2.56 (.131)	3.21 (.124)	3.02 (.108)	3.31 (.111)
Higher education degree	2.54 (.104)	3.23 (.077)	2.97 (.081)	3.32 (.068)

\* Group means significantly differ on  $p < .05$  level \*\* Group means significantly differ on  $p < .01$  level

\*\*\* Group means significantly differ on  $p < .001$  level

Table 7: Group means (SE) among AEC blended adult learners.

Finally, the last research question is focused on. In predicting social inclusion, consisting of social participation and social connectedness, among blended adult learners, gender, native language and marital status are simultaneously included as categorical predictors. Using Wilks' Lambda, there is a significant effect of native language on social inclusion ( $\lambda = 0.84$ ,  $F(2, 116) = 11.03$ ,  $p < .001$ ). Univariate ANOVAs (Table 8, p. 93) reveal that native language has a significant effect on both social participation, and social connectedness. Additionally, using Wilks' Lambda, there is also a significant effect of gender on social inclusion ( $\lambda = 0.94$ ,  $F(2, 116) = 3.61$ ,  $p < .05$ ). However, Table 8 (p. 93) reveals that gender only has a significant effect on social participation. Furthermore using Wilks' Lambda, there is a significant effect of marital status on social inclusion ( $\lambda = 0.94$ ,  $F(2, 116) = 3.47$ ,  $p < .05$ ). As reported in Table 8 (p. 93), marital status has a significant effect on social connectedness.

During the prediction of social capital, including bonding and bridging social capital, age group and native language are considered as categorical predictors. Using Wilks' Lambda, there is only a significant effect of native language on social capital ( $\lambda = 0.92$ ,

$F(2, 116) = 4.75, p < .01$ ). Table 8 (p. 17) shows that native language has a significant effect on both bonding and bridging social capital.

Dependent variable	Categorical predictor	<i>Df</i> model	<i>Df</i> error	<i>F</i>	Partial Eta Squared
<b>Social inclusion</b>					
Social participation ( $R^2 = .153$ ; Adjusted $R^2 = .102$ )	Gender	1	117	4.25*	.035
	Native language	1	117	9.41**	.074
	Marital status	1	117	0.50	.004
Social connectedness ( $R^2 = .170$ ; Adjusted $R^2 = .120$ )	Gender	1	117	3.29	.027
	Native language	1	117	13.58***	.104
	Marital status	1	117	6.61**	.053
<b>Social capital</b>					
Bonding social capital ( $R^2 = .176$ ; Adjusted $R^2 = .126$ )	Age group	1	117	1.21	.030
	Native language	1	117	6.46**	.052
Bridging social capital ( $R^2 = .215$ ; Adjusted $R^2 = .169$ )	Age group	1	117	1.20	.030
	Native language	1	117	9.23**	.073

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  level

Table 8: Results of univariate ANOVA's among blended adult learners.

Therefore, native language is the only socio-demographic variable that significantly predicts social inclusion and social capital among blended adult learners. Additionally, gender significantly predicts social participation and marital status has a significant effect on social connectedness. The effect sizes are small to medium (Cohen, 1988).

## Discussion

The current study has contributed to our understanding of adult learners' perception of change in social inclusion and social capital after participation in OBL. The study has been conducted in two different cases, namely blended learning provided by the AECs and online learning organised by the FEA.

### *Contrasting two cases: Blended versus online adult learners*

In general, our results showed that online and blended adult learners perceive a decrease in social participation and bonding social capital, but an increase in social connectedness

and bridging social capital. In addition, it has been found that blended and online learners differ significantly from each other regarding their perception of change in social inclusion and social capital. Blended adult learners perceive more positive changes compared to the online adult learners in this study. This significant difference could have been related to the different nature of the learning modes (Rovai & Jordan, 2004). There is a lack of research which contrasts OBL regarding outcomes such as social inclusion and social capital. If different delivery modes are compared, most often, learning effectiveness, academic scores or satisfaction are the focus (e.g., Larson & Sung, 2009; Means et al., 2013). The results of these studies are mixed: some show no significant difference (e.g., Larson & Sung, 2009), others indicate that blended learning environments show more advantages (e.g., Means et al., 2013, Rovai & Jordan, 2004). However, they have a common base, stressing the importance of an appropriate pedagogy, which supports (online) interaction and collaboration instead of independent online learning (Means et al., 2013). In this study, learner-learner interaction was not facilitated in the online learning environment of the FEA. Therefore, it seems that the pedagogical approach, next to the mode of delivery, might be an additional factor, which explains the difference in perception of change in social inclusion and social capital between online and blended learners. As being stated by Tamim et al. (2011):

It is arguable that it is aspects of the goals of instruction, pedagogy, teacher effectiveness, subject matter, age level, fidelity of technology implementation, and possibly other factors that may represent more powerful influences on effect sizes than the nature of the technology intervention. (p. 17)

A decrease in social participation has been observed among both blended and online adult learners. This finding is not surprising because adults spend a lot of their spare time studying. Theoretically, this can be interpreted according to the rational choice theory (Allingham, 2002), which states that adults perform a cost-benefit analysis before engaging in an educational experience. One of the possible costs might be lack of time, which results in no time for leisure activities (Boeren, 2009) and thus explaining the decrease in social participation.

Furthermore, a discrepancy in the perceived change of social inclusion among blended adult learners has been identified. They indicated that their social connectedness increased, whereas their social participation decreased. A possible explanation could be that their social participation was affected by the extensive engagement during participation in the courses, because this reflects the behavioural dimension of social inclusion. In other words, blended adult learners perceive that their social participation has been limited due to their educational participation. Notwithstanding the decrease in social participation, blended adult learners still experienced an increase in the feelings of social connectedness attributed to their participation in the blended course. The combination of the three modes of interaction—learner-content, learner-instructor and especially learner-learner—seems to be a factor which explains the increased social connectedness reported in the blended case. The results suggest that the behavioural and emotional dimensions of social inclusion are affected in opposing ways for learners participating in blended adult learning.

Furthermore, the results imply that blended adult learners perceive more positive change regarding bridging social capital compared to bonding social capital. In this respect, Field (2009) specifies that participation in learning leads to extending social networks, which refers to bridging ties. Hence, it seems that participation in blended adult learning primarily supports the development of new social relations and networks (cf.

bridging ties), while the close, bonding ties are not directly affected (Oztok et al., 2015; Steinfield et al., 2008).

Almost no change in online adult learners' social inclusion or social capital has been identified. It seems as if the majority of online adult learners did not perceive an influence on social inclusion or social capital due to their participation in the online courses. Moreover, if they experienced a change, it was slightly negative. This finding can be related to pedagogical characteristics of the learning environment, but also to the activation approach towards the unemployed. First, the lack of online learner-learner interaction in the adopted online learning environment might be an explanatory factor. Interaction with peers was absent. Yet an online coach was available upon the request of the online learner. The instructional design did not take into account the utmost importance of online learner-learner interaction (Inayat et al., 2013; Kang & Im, 2013). This suggests that the presence of online learner-learner interaction could be of major importance if the enhancement of social inclusion and social capital is aimed for. Second, the activation approach towards the unemployed influences the change in social inclusion and social capital as well. According to Ó Tuama (2016) a 'restrictive approach' focuses merely on directing citizens towards courses and employment, without taking into account the adult's circumstances. Most practices in our current societies lean towards this restrictive approach. Some unemployed adults might benefit from this approach, which enhances their human capital through (online) courses. However, 'others need not only help with their human capital, but also with their social capital in order to leverage their education and training' (Ó Tuama, 2016, p. 116). Certainly for vulnerable unemployed adults, 'reflective activation' could be beneficial in order to enhance their social inclusion and social capital (Ó Tuama, 2016).

*The relationship between adult learners' socio-demographic background and their social inclusion and social capital*

In the two cases, our results indicate that *native language* is related to the differences between adult learners with regard to their social inclusion and social capital development. Moreover, it is the only socio-demographic variable significantly related to social inclusion and social capital, among both groups of adult learners. This partly contradicts the finding of Ke and Kwak (2013), who reported that learners from minorities have more negative experiences in online learning. But our finding is in line with previous research, which highlighted that vulnerable adults, such as non-natives, benefit more from their educational participation regarding social outcomes (Manninen et al., 2014; De Greef et al., 2014; Panitsides, 2013). This supports the assumption that vulnerable adults (e.g., non-natives) experience a greater need and urgency towards social, personal and educational development compared to those who are more privileged.

Furthermore, other socio-demographic variables (i.e., gender, marital status and age) reveal differences among adult learners with regard to their social participation and social connectedness. Female learners from the blended learning group perceived less social participation compared to their male peers. Also in the blended learning environment, married adults show more social connectedness in comparison to unmarried participants. For this finding, one might suggest that married adults participate in adult education because of other motivational orientations, such as social stimulation (Boshier, 2006). In addition, the results indicate that significant differences exist among various age groups. Younger adults participating in the blended learning environments perceive that they have built up more social capital compared to older adult learners. These findings support the claim of the BeLL study (Manninen et al., 2014) which states that for younger participants adult education serves as a 'stepping stone' into society. Yet, no other socio-demographic

variable seems to explain adults' social inclusion and social capital development, whereas educational attainment, for example, was assumed to account for differences among adults (Manninen et al., 2014).

To sum up, this study has identified that non-natives perceive more benefits regarding social inclusion and social capital development compared to native adult learners in blended as well as online learning environments. In other words, non-native adult learners experienced to a greater extent benefits in the blended and the online case. This entails that both modes of delivery bring about perceived positive benefits for non-native adult learners. For non-native adult learners the engagement in whichever learning environment might yield substantial benefits because of the multiple types of interaction which feed their social relations. Additionally, in the blended learning environment, gender, marital status and age group revealed differences among the adult learners.

### *Limitations*

Nonetheless, attention should be paid to the interpretation of the results of this study. First, the questionnaire referring to social inclusion and social capital has been based on self-reported perceptions of the adult learners. However, while conducting a research of such complex phenomenon, the meaning-making experiences and perceptions of the central actors should be taken into account. Furthermore, it was not possible to compare blended and online learners from the same type of organisation due to the fact that the research has been conducted in authentic contexts to ensure ecological validity. In Flanders, adult education centres did not organise fully online courses at the time of data collection. Therefore, the differences in institution (AECs versus FEA) and their various target groups might have contributed to the findings of this study. Next to that, the course duration and institutional characteristics have not been taken into account in this study. These variables also could have accounted for differences in social inclusion and social capital. Finally, all adult learners filled in the questionnaire in Dutch, which might have entailed problems for the non-native adult learners. However, in order to follow the courses, all learners should possess an appropriate level of Dutch language skills.

### *Recommendations for future research*

In order to examine diverse technology-based learning environments in the future, extensive (quasi-)experimental studies are needed in order to scrutinize the role of different pedagogical factors. Next to quantitative research, future qualitative research on the meaning-making processes and experiences of adult learners is recommended. This may be useful to deepen the findings of this quantitative study with more nuanced and in-depth information concerning adults' perception of change in social inclusion and social capital. Moreover, longitudinal studies could analyse the impact of participation in adult education with respect to social outcomes more closely. Above all, case studies focusing solely on the experiences of vulnerable adults, such as non-natives, could enhance our understanding of this specific target group. Finally, other variables next to individual learner characteristics should be included in future research. It is not merely the mode of delivery that explains effects of educational participation (Bates, 2015). Elements of the learning environment are of major importance in creating conditions supporting social inclusion and social capital in OBL environments.

## Conclusion

In the context of digitalisation, this study examined how adult learners perceive changes in their social inclusion and social capital triggered by participation in blended and online adult learning. First, results show that online and blended adult learners differ significantly in their perception of change in social inclusion and social capital. Blended adult learners perceive more positive changes, but the behavioural and emotional dimensions of social inclusion are affected in opposing ways. This study also suggests that participation in blended adult learning primarily supports the development of bridging social capital. Online adult learners, on the other hand, have not perceived any change in social inclusion or social capital due to their participation in online courses. Second, although engaged in different learning environments, similar findings on the influence of native language in supporting social inclusion and social capital have been reported in both cases. Non-natives experience a higher increase in social inclusion and social capital compared to native adult learners in the two cases.

This study provides a theoretical framework for the exploration of social inclusion and social capital among adult learners, through the concepts of social participation and social connectedness, complemented by bonding and bridging social capital. The findings suggest that participation in OBL is valuable for non-natives' social inclusion and social capital. Therefore, online and blended learning should be encouraged among adults whose life biographies contain more transition phases, certainly in times of increasing migration. Furthermore, a reflective approach towards activation of unemployed adults is recommended. This approach does not only take into account the enhancement of adults' human capital, but social capital as well. Finally, the findings highlight the importance of OBL's pedagogy. Online learner-learner interaction seems to be necessary, not only in order to bolster high quality learning, but also to support social inclusion and social capital.

## Notes

<sup>1</sup> The values are presented on a 5-point Likert scale, ranging from 1 to 5. This entails the following for interpretation: values below 3 indicate a perceived negative change, a value of 3 indicates no perceived change, values above 3 indicate a perceived positive change.

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## Appendix

### *Social participation*

*Since I have started to follow this course, I feel like the following social activities have ...*  
*1: decreased significantly, 2: decreased, 3: neither decreased, nor increased, 4: increased, 5: increased significantly*

Visiting family and relatives

Visiting friends and acquaintances

Taking part in local activities and events in my neighbourhood

Taking part in artistic activities with others (making music, performing, dancing, ...)

Taking part in cultural activities (going to the theatre, movies, museums, ...)

Taking part in sportive activities with others

Organizing activities in my neighbourhood or for an association I am involved in

Spending time with others, for example in a pub or restaurant

### *Social connectedness*

*By following this course, ... (1: completely disagree—5: completely agree)*

I feel comfortable in the presence of strangers.

I am in tune with the world.

I fit in well in new situations.

I feel close to people.

I see people as friendly and approachable.

I feel understood by the people I know.

I am able to relate to my peers.

I am able to connect with other people.

### *Bonding social capital*

*By following this course, ... (1: completely disagree—5: completely agree)*

There are several people I trust to help solve my problems.

There is someone I can turn to for advice about making very important decisions.

There is someone that I feel comfortable talking to about intimate personal problems.

There are several people I can talk to, when I feel lonely.

I know someone I can turn to, if I needed financial support.

There are several people who would put their reputation on the line for me.

There are several people who would be good job references for me.

I know people well enough to get them to do anything important.  
There are several people who would help me fight an injustice.

*Bridging social capital*

*By following this course, ... (1: completely disagree—5: completely agree)*

I am interested in things that happen outside of my town.

I want to try new things.

I am interested in what people unlike me are thinking.

I am curious about other places in the world.

I feel like part of a larger community.

I am willing to spend time to support general community activities.

I have new people to talk to.