



## **Socio-spatial inequality and local educational action in the construction of caring cities**

**Xavier Bonal, Yayo Herrero, Marina Canals,  
M<sup>a</sup> Ángeles Cabeza and Aina Masgoret**

Commissioned by the International Association of Educating Cities

**GOLD VI Working Paper Series #03**

November 2021

---

This paper has been produced as an Issue-Based Contribution to the sixth Global Report on Local Democracy and Decentralization (GOLD VI): the flagship publication of the organized constituency of local and regional governments represented in United Cities and Local Governments. The GOLD VI report has been produced in partnership with the Development Planning Unit (University College London), through the programme Knowledge in Action for Urban Equality (KNOW). GOLD VI focuses on how local and regional governments can address the local manifestations of growing inequalities and contribute to create 'Pathways toward urban and territorial equality'. The GOLD VI report has been produced through a large-scale international co-production process, bringing together over a hundred representatives of local and regional governments, academics and civil society organizations. This paper is an outcome of this process and is part of the GOLD VI Working Paper series, which collects the 22 Issue-Based Contributions produced as part of the GOLD VI process.

In particular, the present paper has contributed to Chapter 5 on 'Caring', which focuses on the multiple actions that promote the care of diverse groups within society through safety nets and solidarity bonds, and the ways in which local and regional governments can promote caring practices that support vulnerable groups, as well as those that have historically 'taken care' of others.

This paper has been produced by Xavier Bonal, Yayo Herrero, Marina Canals, M<sup>a</sup> Ángeles Cabeza and Aina Masgoret, and commissioned by the International Association of Educating Cities.

The International Association of Educating Cities (IAEC) is a non-profit organization that brings together local governments from around the world committed to education as a tool for social transformation, it promotes the exchange of ideas, reflections and good practices. The Charter of Educating Cities constitutes its roadmap to build cities based on lifelong education; inclusion; a friendly, healthy and accessible environment; sustainability; citizen participation; fairness, and creativity, amongst others. Today, the IAEC constitutes a consolidated global network with a history of more than 30 years that gathers nearly 500 cities from 35 countries united to develop their educational potentialities.

Xavier Bonal is a Professor of Sociology at the Universitat Autònoma de Barcelona (UAB) and Special Professor of Education and International Development at the University of Amsterdam (UvA).

Yayo Herrero is a Consultant and Researcher on issues related to social ecology and ecofeminisms at the Garua S. Coop Mad. cooperative.

Marina Canals is the General Secretary of the International Association of Educating Cities, and M<sup>a</sup> Ángeles Cabeza and Aina Masgoret are project managers at the Secretariat.

# Abstract

The increase in social inequality and the new forms of exclusion and expulsion in cities are increasingly forcing public care policies to be based on the ethics of care. The forms of social isolation and poverty and the attention to the multiple needs of the reproduction of life call for a policy based on a paradigm that prioritises welfare and sustainability. Local governments play a key role in this field, due to their strategic position of proximity and knowledge of community needs. In this challenge, citizenship education is a cornerstone of the development of a strategy that fosters care and prevents social isolation while educating future generations in new values and priorities in order to guarantee social equity. This report identifies five challenges for local political action which use education to respond to the needs derived from the inequality and social fragmentation that characterise 21st-century cities. It concludes with a set of recommendations arising from the reflections made for each of the five challenges.

## 1. Inequalities in the global city and forms of social and educational exclusion

**In recent decades, social inequalities have increased in many urban spaces in the globalised world. Economic growth and social development have been unevenly distributed and have generated ever-increasing processes of urban fragmentation and segmentation.**

Globalisation and polarisation have occurred simultaneously, even in cities in countries with strong welfare regimes.<sup>1</sup> Furthermore, the increase in social inequalities since the mid-1970s and the inability of governments to develop public and social policies to reduce them have helped aggravate socioeconomic segregation in major cities.<sup>2</sup> Economic globalisation, Global North-Global South inequalities, political conflicts, climate change and the ecological crisis are also affecting migratory movements around the world. Despite the numerous restrictions on the movement of people, compared to the flow of goods and capital, the number of migrants in the world reached 270 million in 2020 (3.5 per cent of the world population), compared to 120 million in 1990.<sup>3</sup> Socio-economic spatial segregation has increased as a result of all these trends, although its intensity and characteristics have varied in different countries and cities depending on factors such as pre-existing urban segregation, the economic restructuring process, the development and transformation of welfare states, or the type of housing policies.<sup>4</sup>

It is in cities where the extreme contradictions between technological and financial development are most visible, as are extreme forms of the exclusion of minorities and groups who

are not even exploited but expelled from all realms of social life.<sup>5</sup> The brutality with which this exclusion takes place runs parallel to the complexity of the forms of domination and inequality. The substitution of the personalisation of the dominance or exploitation by complex networks of financial power waters down the identification of power, and with it the possibilities of a successful social struggle. It is quite possibly this complexity and the network-based nature of economic power that provides an insight into the reproduction and simultaneity of extreme forms of city life, in which global financial elites live alongside groups in situations of extreme poverty. Between these extremes, an impoverished middle class struggles not to suffer the onslaught of exclusion and channels all possible resources to ensure the reproduction of its position.

The debilitation or absence of the social state unquestionably has an impact on the inability of social systems to protect the most disadvantaged. In addition, economic instability and precariousness are accompanied by fragmentation processes and social isolation. **The recent COVID-19 crisis highlighted the neglect of care as a society, relegated to the private sphere and designated almost exclusively to women.**

Indeed, throughout the world, the sexual division of employment, typical of patriarchal societies, assigns the daily and generational reproduction of life chiefly to the domestic sphere.<sup>6</sup> Studies into the feminisation of poverty reveal inequalities from the gender perspective,

1. Musterd, Marcinczak, van Ham, and Tammaru, 'Socioeconomic segregation in European capital cities'.

2. Atkinson, 'Inequality: What Can Be Done?'

3. See [https://publications.iom.int/system/files/pdf/wmr\\_2020.pdf](https://publications.iom.int/system/files/pdf/wmr_2020.pdf).

4. Musterd and Ostendorf, 'Urban Segregation and the Welfare State'; Tammaru et al., 'Socio-Economic Segregation in European Capital Cities: East Meets West'.

5. Sassen, 'Expulsions'.

6. Carrasco, 'Mujeres, sostenibilidad y deuda social'.

with women taking on not just the most unprotected and precarious jobs, but also a disproportionate responsibility in terms of unpaid care tasks that hinders their entry into the labour market and exerts huge pressure on those who have to maintain the living conditions of the family nucleus in increasingly precarious societies.<sup>7</sup>

The fragility of the welfare state and the feminisation of the responsibility of care in urban societies are linked, triggering a care crisis that brings about new inequalities in terms of the quantity and quality of care received by sectors of the population that cannot afford care in the market.<sup>8</sup> Likewise, extremely precarious jobs in the field of cares are also emerging.<sup>9</sup>

These structural inequalities affect in different ways the access of men and women to cities, their use of urban assets, the enjoyment of public space and participatory democracy. In turn, they violate the economic, social and cultural rights of women.<sup>10</sup> From the field of geography, the sexual division of employment, due to specific roles being assigned to men and women, entails an unequal distribution of public and private spaces, and, therefore, builds “a sexed space”.<sup>11</sup>

**Education has not been immune to these trends. Residential segregation, migratory movements, economic inequalities and, at times, educational policies themselves have triggered an ever-growing process of educational segregation among the most disadvantaged social groups and the upper classes of society.** In addition, the major contradiction between the process of daily and generational reproduction of people and economic metabolisms is not addressed from an educational perspective: social divisions due to economic, cultural, religious, linguistic, sexual, gender-related or other aspects are aimed at and incorporated into the educational experiences of children, young people and adults.<sup>12</sup>

Let's see how educational inequalities tend to occur in the city. Firstly, through the processes of urban and social fragmentation that result in a different geography of educational opportunities. The Atlas of Inequality<sup>13</sup>, prepared by a team from the Massachusetts Institute of Technology (MIT) based on the analysis of citizen mobility, reveals that **there is only one social space where we separate ourselves more than in the place of residence, which is at school.** In the

other aspects of our daily lives (shopping, leisure, work), we mix much more than we do in the neighbourhood where we live. However, school segregation is significantly higher than residential segregation. In neighbourhoods or districts of cities around the globe, some schools concentrate proportions of the socially disadvantaged population well above the average for the territory. Avoiding schools in poor neighbourhoods and avoiding schooling with groups at academic risk accentuates divisions in the schooling process and, therefore, educational opportunities.

Secondly, **educational inequalities in the city are also at the extreme due to the exclusion of knowledge and the necessary skills that guarantee social inclusion.** Socially functional literacy today involves the acquisition of skills that go beyond reading and writing. It involves having access to digital skills, but also having access to forms of political or scientific literacy,<sup>14</sup> without which the world around us cannot be understood. Educational exclusion, therefore, goes far beyond formal education. It continues throughout life and focuses on a series of out-of-school experiences.

Thirdly, the school curriculum itself and teaching tend to emphasise mental models and stereotypes that legitimise inequalities, as they reproduce visions about the sexual division of employment or relations of domination that explicitly or implicitly reinforce established symbolic and material hierarchies. **Education is focused on the world of production and omits the reproduction of life, marginalising the social value of care at school itself, both from the point of view of its content and its social function of guardianship.**

The increase in school segregation also coincides with a historical moment in which **education is an increasingly necessary but insufficient condition to guarantee social mobility.** The trust placed in the school system as a driving force behind the social elevator has been questioned by the advent of the best-trained generations in history that are unable to improve the social positions of their parents. Paradoxically, the more necessary that education is to prevent social exclusion and acquire the minimum skills necessary for social inclusion, the more that access to basic education itself becomes polarised in a context of ever-growing social segmentation. Education is therefore more and more necessary and less and less insufficient to reach a position

7. Durán, La riqueza invisible del cuidado; Chant, The International Handbook of Gender and Poverty; Chant, Gender, Generation and Poverty; Chant, Gender, Urban Development and Housing; Kabeer, Social exclusion; Castells, La cuestión urbana.

8. Carrasco, 'Mujeres, sostenibilidad y deuda social'

9. Río and Pérez Orozco, Una visión feminista de la precariedad desde los cuidados.

10. Rico and Segovia, ¿Quién cuida en la ciudad?

11. McDowell, Gender, Identity and Place.

12. Picchio, Social Reproduction.

13. See <https://inequality.media.mit.edu/>.

14. Tedesco, Educación y desigualdad en América Latina y el Caribe.

in society. The need even extends the concept itself of the right to education, which should be construed as a right to learning beyond formal education and as a right that needs to be covered in the first cycle of life. If we want to continue trusting in education as a social elevator, we need to design reforms that expand and broaden the right to lifelong education.

## 2. Five educational challenges for local action focused on equity and care

The three forms of educational inequality mentioned above have causes that are often external to the territory in which they occur, but become extreme in the urban space. Despite the 'remoteness' of the factors at the root of inequality, it is on a local level where collective responses of an almost counter-hegemonic nature can be visibly expressed, capable of responding to not only wider but also deeper social gaps. Along this line, it is worth highlighting the work carried out by numerous local governments committed to education as a driving force behind the transformation and reduction of inequalities, grouped together in movements such as the International Association of Educating Cities.<sup>15</sup> Five areas can be identified in which local educational policy has generated (and can still generate) alternatives in order to reduce inequality: the policy of reducing educational segregation; education based and focused on care; the integration of educational policy into social action in the community; education for the development of critical citizenship; and the extension of educational opportunities beyond formal education. Also included are some good practices that illustrate local and regional policies in these areas.

### 2.1 The struggle against urban and educational segregation

The best policies against school segregation have been developed on a local and regional level. There has been no shortage of attempts on a large scale, including the busing policy<sup>16</sup> in the United States, especially active in the 1970s, but their effectiveness has been limited, to say the least, or has even triggered white flight processes that have had a countereffect.<sup>17</sup> **Even though a great deal of the factors that explain school segregation are external to educational policy (residential segregation, intensity of migratory waves, cultural patterns in the choice of school), there is a wide margin of intervention of educational policy to reduce the overconcentration of students at certain schools.**<sup>18</sup>

Obviously, despite pursuing the same objective, the instruments of school desegregation (or the tools to foresee school segregation) vary depending on the educational systems and their regulatory framework. Furthermore, their effectiveness is also variable on a local level, depending on factors such

as the social structure of the territory, the spatial location of schools or the mobility patterns of the population. All in all, international comparisons between educational systems and the evaluation of educational policies allow us to identify certain strategies that have been particularly effective in securing greater heterogeneity in schools.

Firstly, **the reduction of school segregation is more effective in cities with a greater capacity to unify intersectoral policies, especially in housing, urban planning and education.**

The close link between residential and school segregation calls for the design of a public policy capable of expressing multidimensional responses to integration needs in cities that tend towards atomisation. Secondly, international comparisons show us that **educational systems with a high level of differentiation in types of school, with a greater freedom of choice of school, or with academic selection criteria in the access to certain schools or to different educational pathways, tend to present**

15. More information on [www.edcities.org](http://www.edcities.org). Of special importance is the Charter of Educating Cities, which is the roadmap of the member cities of the Association: <https://www.edcities.org/en/charter-of-educating-cities/>.

16. Busing, or transporting students between school districts to avoid segregation, took hold in the United States after various rulings by the U.S. Supreme Court that urged public authorities to take measures to avoid racial separation in schools.

17. Cascio et al., 'From Brown to busing'.

18. Bonal, 'Education policy and school segregation of migrant students in Catalonia'.

**higher levels of social fragmentation among students.** Although these aspects are not usually the responsibility of local governments, there are mechanisms to regulate their effects. Some measures that can be implemented by local governments include the use of catchment areas (school zoning) to prevent status-based clustering of students and to bolster local schooling; the early detection of students with special education needs and their proportional allocation between local schools; decisions on opening or closing schools or class groups; and the reduction of ratios in schools with more students of a disadvantaged social origin. Thirdly, **the expression of community educational strategies beyond the school is effective in removing social prejudices, increasing intercultural contact, and laying down consensus mechanisms between communities.** A good example of this can be seen in the city of Brussels (Belgium), where municipal schools educate secondary school students in active citizenship through the 'Civic Practices' project, in which they have the opportunity to actively engage in the social transformation of their city by carrying out altruistic activities at public or non-profit organisations.<sup>19</sup> Likewise, different local governments have set up steering groups with civil society, with the aim of promoting equal educational opportunities and fostering quality education. The experience of the 'Pact against School Segregation', approved in Catalonia in 2019, is also a good example of coordination between the authorities and civil society in the construction of a collective roadmap aimed at eliminating school segregation.<sup>20</sup>

## Desegregation policies in Flanders, Belgium

In 2013, the policy of admission to nursery, primary and lower secondary schools in the Flanders region changed from a free-choice system to a reservation of places model. In the new system, each school has to set aside some of its places for people of disadvantaged socioeconomic origin, while the rest of the places are allocated through ordinary registration. The reservation of places is determined according to the socioeconomic make-up of the neighbourhood or community in which the school is located. If none of these reservations is required, it is allocated to the other group. As a result, the desegregation policy does not consist of a distribution of students with a low socioeconomic level, but a system of representation proportional to the area's social composition. The reservation policy sets out to achieve a more equitable distribution system between schools, without altering the expression of family preferences. The application of this system in several cities in Flanders showed positive effects on reducing the socio-economic segregation of students, while also maintaining the preferences of families in more than 90 per cent of cases.<sup>21</sup>



Santos (source: City of Santos)

19. More information in the Bank of Experiences of the International Association of Educating Cities: <http://w10.bcn.es/AAPPs/edubridge/pubExperiencesAc.do?idexp=41445&accio=veure&idioma=3>.

20. See [https://www.sindic.cat/site/unitFiles/6077/Pacte%20segregacio%20escolar%202018\\_cast\\_ok.pdf](https://www.sindic.cat/site/unitFiles/6077/Pacte%20segregacio%20escolar%202018_cast_ok.pdf).

21. More information on: <https://cemapre.iseg.ulisboa.pt/educonf/4e3/files/Papers/Wouters.pdf> and <https://rethinkingbelgium.eu/wp-content/uploads/2019/08/Cantillon.pdf>.

## 2.2 Education based and focused on care

Historically, the daily and generational reproduction of human life has fallen mainly on women. Women spend between one and three hours a day more than men on housework, between two and ten times more time a day on providing care (to children, the elderly and the sick), and between one and four hours a day less on salaried employment. In Latin America, women spend between a fifth and a third of their daily or weekly time on unpaid domestic chores and care, while in the case of men this percentage is around 10 per cent.<sup>22</sup>

In recent decades, there has been a huge change in how city dwellers use their time. On the one hand, huge numbers of women have entered the world of work, although under unequal conditions. Even though men are gradually taking responsibility for some reproductive tasks, joint responsibility per se has yet to be achieved. The existence of double shifts slows down women's entry into the employment market and heightens socioeconomic inequalities.<sup>23</sup>

In addition, there have been major social transformations that have significantly modified the management of care. The increase in life expectancy, demographic changes, urban planning that hinders the autonomy of the elderly and childhood, and the loss of neighbourhood and community relationships are increasing the need to spend more time on care, while there is also less time available to provide it.<sup>24</sup>

**The responses to this care crisis have been diverse. Some governments have organised benefit systems and defined rights on work-life balance, but these measures are provided as emergency responses and have sometimes had the effect of fuelling the process of the commodification and privatisation of care.**<sup>25</sup>

Households have also reacted to this care crisis. The distribution of housework is being reorganised, once again without sufficient co-responsible participation of men. This reorganisation takes different directions. One is work/life balance, transferring to other people – via employment or informal support – certain responsibilities and resorting to various strategies to solve everyday issues. Another is intergenerational

redistribution, placing responsibilities on the extended family, especially grandmothers. Thirdly, there is redistribution by class and/or ethnicity, through the purchase of domestic services. The extension of 'global care chains' is the process whereby the care that some urban families can afford not to do is transferred to other women (usually migrants and in precarious working conditions), who in turn must delegate to others still in the country of origin (often grandmothers, sisters or aunts) the care tasks that they used to perform.<sup>26</sup> Caregiving in core countries transfers its effects to periphery countries, in which different types of difficulties are forcing international migration.<sup>27</sup>

**“There are multiple urban experiences, including in the education sector, that incorporate care as a cornerstone of public policy.”**

From a gender economics perspective, there is an impact on the need to foster public policies that stimulate joint responsibility between people and between society and institutions, so that it is possible to guarantee the universal right to care while reducing the inequalities caused by the feminisation of care, which impoverishes women individually and economically. However, processes of awareness, training and education are needed for this impetus to take place. The invisibility and unequal allocation of care work is related to the dominant patriarchal mindsets in society and its solution is not exclusively technical. **Education plays an important role as a process with the capacity to encourage cultural changes that lead to joint responsibility and that highlight the common good and public services as goals to be achieved and defended. Likewise, the educational institution provides services which entail, in addition to educational, the guardianship and care of children.**

There are multiple urban experiences including in the education sector, that incorporate care as a cornerstone of public policy. Four areas are identified below in which the dimension of care could be conceived as a guiding light for a public policy that improves living conditions.<sup>28</sup>

22. Rico and Segovia, ¿Quién cuida en la ciudad?

23. Durán, La jornada interminable; Pérez Orozco, Subversión feminista de la economía.

24. Pérez Orozco, Perspectivas feministas en torno a la economía; Rico and Segovia, ¿Quién cuida en la ciudad?

25. Agenjo, Economía Política Feminista.

26. Carrasco, Mujeres, sostenibilidad y deuda social.

27. Pérez Orozco, Subversión feminista de la economía.

28. The proposed cornerstones are inspired by the Madrid Care Plan implemented by Madrid City Council in 2017. <https://madriddsalud.es/ciudaddeloscuidados-2/>.

## A) The city sensitive to the citizen's daily life's ill-being and well-being

A city sensitive to care generates spaces and experiences of protection, guardianship and education to enhance the population's general well-being. This city model:

► **Entails joint responsibility in everyday care.** Schools (especially kindergartens), day centres for the elderly, care homes, reception centres for the homeless, immigrant victims of violence, or children at risk, and care and support for people with mental health problems or functional diversity are all public services that care for people, combine education with the possibility of counselling and ensure the right to develop lifelong independent projects.

### 'Good Start' programme in Medellín (Colombia)

As an example, this experience - in operation since 2006 - provides an all-round care service for vulnerable children in the city, from pregnancy to the age of five. It is run by the Mayor's Office of Medellín and has an area that monitors pregnancy and the first year of life in order to help improve the health of pregnant women and increase the chances of healthy births. Boys and girls receive care from an interdisciplinary team of nutritionists, psychologists, social workers, teachers and physical educators, in addition to having access to food, sports and recreational services.<sup>29</sup>

► **Educates people to be aware of the care required in critical moments of life (grief, palliative care, unwanted loneliness, profound life changes), and encourages healthy lifestyles,** taking into account the social determinants of health and understanding that health is a personal matter, but is above all a public and community matter. Along these lines, for example, Andong City Council and the Hospital of Andong (South Korea) created a 'Happy Learning Centre' at the hospital itself in 2014, so that inpatients, their relatives and external visitors could benefit from educational and cultural activities, thereby helping improve their emotional and physical state during their time at the hospital.<sup>30</sup>

► **Trains people to be on the lookout for fragility, difficulty, needs or abuse, and to respond actively to them.** The programme 'Sensors: Multipliers for Non-Violence towards the Elderly' (Montevideo, Uruguay) is a good example in this area. This initiative uses workshops to train members of the local community to take joint responsibility for the rights of the elderly.<sup>31</sup> Another good practice is the 'Women without Violence Networks' experience in León-Guanajuato (Mexico), which encourages the training and organisation of women through the formation of solidarity groups in order to prevent gender-based violence.<sup>32</sup>

29. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=31985&accio=veure&idioma=3>.

30. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=38825&accio=veure&idioma=3>.

31. More information in the Bank of Experiences of the International Association of Educating Cities: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=29085&accio=veure&idioma=3>.

32. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=41825&accio=veure&idioma=3>

33. Prats, Herrero, and Torrego, La gran encrucijada.

34. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=46105&accio=veure&idioma=3>.



Medellín (source: City of Medellín)



## B) The city that takes care of public space and community life

Urban ecology and environmental health show that cities and peripheral areas are facing major challenges related to air quality, adaptation to climate change, mobility systems and dietary patterns that have a significant impact on the health of people and on the need for care (Prats et al., 2016).<sup>33</sup> Without a healthy environment, life cannot be cared for. In this sense, **education for sustainability is related to education based and focused on care.**

### Support programme for urban food security by means of urban vegetable patches (Praia, Cape Verde)

The project sets out to bolster the food systems of the city of Praia in order to guarantee food security and nutrition security for its inhabitants. To achieve this, the city council has a training and mentoring centre where citizens can learn how to sustainably create and maintain vegetable patches.<sup>35</sup>

### Sustainable Food Plan (Rennes, France)

The city of Rennes (France) has been implementing a 'Sustainable Food Plan' since 1999, which sets out to foster a healthy and sustainable diet based on a strong bond between producers and consumers and the elimination of food waste. The Rennes municipal kitchen centralises the preparation of the meals that are served via different municipal services. Around 12,500 meals are prepared every day, 10,000 of which are allocated to the 48 municipal schools. Thanks to a passionate commitment to encouraging short supply chains, around 80 per cent of suppliers are now local producers, while awareness campaigns have reduced food waste by 58 per cent.<sup>34</sup>

Sustainability requires proximity and is based on local sources, so the neighbourhood, town or municipality are territorial nuclei conducive to the development of public policy and the education of a caring, inclusive and sustainable citizenship.

### Urban Recyclers Programme (Río Cuarto, Argentina)

Support programme for families engaged in the recovery of urban waste, with a view to dignifying their work and improving working conditions. This programme aims at raising awareness about the importance of recycling and at the institutionalisation of sustainable policies at local level.<sup>36</sup>

## C) Local authorities that administer with care

**Caring local and regional governments need to educate the people working in local institutions who, in many cases, are the ones who provide care. Good treatment of citizens, the quality of care provided, the inclusive nature of the actions designed, universal access to services and a rights-based approach are some of the guiding principles.**

Caring cities stimulate collective forms of care and foster support networks. They work closely with neighbourhoods to ensure the provision of care. They recognise the prominence of the territory to provide care in space and time. They are capable of fostering the active and real engagement of the community in decision-making and in the design of public policies that will directly affect

their daily lives. They promote public-community partnerships with the third sector and organised citizens.

An example of this is the 'RADARS, Community Action for the Elderly' project, launched in a neighbourhood of Barcelona (Spain) in 2008 thanks to the participation of neighbours, shops, pharmacies, associations, libraries, etc., which together with the city council form a prevention and community action network that gives support to local senior citizens who live alone. The 'radars' are local people, businesses and voluntary institutions, who keep an eye on older people they know and contact the network, also made up of social services professionals, who intervene if necessary in collaboration with other entities and other services.<sup>37</sup>

<sup>35</sup> More information on: <http://www.cmpraia.cv/artigo/4>.

<sup>36</sup> More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=42145&accio=veure&idioma=3>.

<sup>37</sup> More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=39045&accio=veure&idioma=3>.

## D) The city that incorporates care into the production system

**Cities can foster the establishment of social clauses that oblige care services to be provided with the quality required by their status of law.** Some cities promote social economy initiatives and undertakings that improve working conditions and safety for caregivers and contribute to job creation in an industry in which demand is high and expected to grow even more.

An example of a good practice is 'The School of Social Entrepreneurship' (Rosario, Argentina) which provides training and mentoring to personal, family and collective entrepreneurship projects with an approach based on popular education. It focuses particularly on profiles with certain levels of vulnerability and social exclusion, who need support and guidance to become more sustainable economically, socially and environmentally. Among them, there are sectors linked to the production of food and handicrafts,

services for the care of people and environmental sustainability (recycling, urban waste collectors, and trades in demand in the neighbourhoods (electricians, blacksmiths, plumbers, etc.).<sup>38</sup> Another similar example is found in the city of Dakar (Senegal) with a support programme for poverty-stricken families, which provides access to a rotating microcredit system with a fixed 1% interest rate to support the launch of income-generating initiatives by individuals or groups.<sup>39</sup>

Caring cities should address the needs and care of the workers in this area, as well as family members who are caregivers. This entails the protection of their working conditions or the creation of mediation agencies between individuals and workers that ensure the dignity of employment. There is an increasing number of programmes along these lines, but their success varies enormously.

### 2.3 Education in community based social action

The well-known African proverb "it takes a village to raise a child" is more plausible today than at any other time in history. In the same way that the family or the church no longer operated as the only agents of education and socialisation with the advent of industrial society, the school is gradually ceasing to be the benchmark institution for education and learning in the 21st century. In other words, education is 'too important' to be left exclusively in the hands of the school and, therefore, requires the participation of various agents working together. However, the educational system and educational policy have never been conceived from a territorial logic in connection with other areas of community services, but fundamentally from a sectoral and systemic logic. Decades of educational reforms focused on the curriculum, the way of teaching or the school organisation have so far failed to significantly reduce academic failure or dropout rates. This is largely due to the inability of public policy to provide a comprehensive response to the needs of individuals to ensure their inclusion. In this sense, in the case of education this is clear, because the problems of school

failure or learning difficulties are often associated with issues that are confined to educational policy and, especially, the school environment.

And yet, there are factors at the root of school failure with origins that lie in the educability conditions of students.<sup>40</sup> Conditions of material deprivation, mental health, frustrated expectations, isolation, daily violence or social stigmatisation call for a logic of intervention that goes far beyond the possibilities of intervention from the strictly school sphere. Without a doubt, **the city and, more specifically, the neighbourhood is the best space from which to 'territorialise' community-based social action, and from which to integrate education into a joint strategy, especially with public health and social protection.** The challenge clearly demands a paradigm shift. It requires a rethinking from a sectoral public policy to community and participatory social action that relies on partnerships with civil society to achieve the needs of individuals with the highest risk of social exclusion. To combat expulsions from the global city, local action from a community perspective is required.

38. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperiencesAc.do?idexp=46405&accio=veure&idioma=3>

39. More information on: <https://observatoirevivreensemble.org/projet-dappui-aux-familles-en-situation-de-pauvrete-pafsep>.

40. Bonal and Tarabini, 'Being poor at school'.

**This review of the school's role in society from a community perspective also involves rethinking the governance of the school itself, which has to be more participative, open and sensitive to local needs.**

If the school forms part of community social action, it cannot distance itself from everyday life in the neighbourhood, its inhabitants and their needs. It should also be remembered that the educational community itself is diverse: students, teachers, families, administration staff, cleaning and maintenance staff, etc. All these people have a view on education, so daily governance and management needs to take them into account. New participation strategies should be fostered by local governments as key agents for spearheading change in this direction.

An example of the potential of networking is 'The educational innovation network' (Viladecans, Spain), which was created in 2013 with the aim of adapting education to new social needs, addressing the problem of early dropout rates and fostering the social inclusion of citizens. The network provides a space for partnership between public authorities, schools, companies and families in order to implement innovative projects in schools.<sup>41</sup>

There are particularly important moments when community action should minimise risks and bolster support systems for individuals. From an educational needs viewpoint, the employment and social demands of today's society make it necessary to design an intervention that is not limited to a certain moment of the life cycle (as a pre-employment stage), but which responds to the permanent needs of training and education. Early intervention in early childhood, the response to the different forms of adolescent social experience and their associated risks, guidance and support in educational

transitions or between education and work, lifelong training needs and the return to the workplace are key moments in which to construct integrated social and territorial intervention, thereby dissociating the centrality of educational policy from the initial stages of the life cycle. In Buenos Aires, for example, the 'Young Strategy' initiative offers guidance to young people and adults through Socio-Educational Guidance Centres located in different areas of the city and at government institutions and civil society organisations such as community centres, libraries and vocational training centres, among others. These centres implement individual and group proposals related to educational, vocational and occupational guidance.<sup>42</sup>

The integration of education into community social action has the potential to be particularly effective in managing social risk, preventing dropouts and providing compensatory strategies. Therefore, we need to rethink the school's role in society, which goes further than knowledge transfer and becomes an institution for care, the prevention of violence and the prevention of risk behaviours, often early signs of dropouts. In this scenario, **the school becomes an institution that does not just teach, but also protects.** In this sense, the 'You Matter to Me' initiative (San Francisco, Argentina) is a programme to combat school dropout rates, especially in the case of young people at risk and teenage mothers and fathers. To do so, free school-based support is provided to young people with discontinuous academic journeys through volunteer actions by university students. In addition, the town council created a free evening kindergarten to help parents continue with their studies. In this way, while mothers and fathers are attending educational centres, their children are in a safe place where they are provided with academic support, care and food.<sup>43</sup>

## 2.4 Generalising access to critical learning

The enormous social benefits associated with new technologies contrast with improper uses aimed at satisfying illegitimate and morally punishable interests. Among them, the ease with which fake news spreads and the ability to impose certain perceptions of reality on social media have increased alarmingly. What the

philosopher Yuval Harari calls 'brain-hacking' poses a huge challenge for today's societies. Artificial intelligence and algorithm generation may be guided by ethical principles, but also by ideological, political or economic interests. The profitability associated with brain-hacking increases the need to prepare citizens with critical

41. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperienciesAc.do?idexp=42125&accio=veure&idioma=3>.

42. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperienciesAc.do?idexp=42305&accio=veure&idioma=3>.

43. More information on: <http://w10.bcn.es/APPs/edubidce/pubExperienciesAc.do?idexp=37945&accio=veure&idioma=3>.

capacity. How will it be possible to equip the population, and especially young people, with instruments to decode the fakeness or partiality of messages? This inevitably involves the possibility of critically training citizens capable of living in uncertainty and with the ability to avoid manipulation. The process also calls for instruments for reflection and self-criticism, as the way in which information is organised and transmitted can manipulate our beliefs and desires.

This is an exercise that schools find difficult to tackle in an exclusive and isolated way. The educational institution has lost its centrality as an institution for providing knowledge and certainties, and it can barely respond to the enormous challenge that training in critical capacity entails in the 21st century. Its indisputable need also contrasts with back-to-basics political positions which argue that the school should only teach the academic syllabus.<sup>44</sup> Therefore, it is necessary to express responses by means of coordinated networking between local governments, civil society organisations and schools themselves.

Education for citizenship today requires going far beyond the idea of civic virtue and education in the values of solidarity, empathy and sustainability. **The goal established in Target 4.7 of the SDGs, focused on ensuring that all students acquire the theoretical and practical knowledge necessary to promote sustainable development, human rights, gender equality, a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity, cannot be achieved solely through a new curriculum.** It requires an alternative pedagogical and civic practice that simultaneously allows for the development of collective awareness and behaviours aimed at guaranteeing sustainability and human rights. Likewise, critical learning also requires the ability to deconstruct the foundations on which certain ideologies and discourses are based, even though they are presented as unique and dominant.

Meanwhile, **from the perspective of educating cities that assume and promote joint responsibility for care, it is essential to foster critical learning that highlights the vulnerability of human lives, interdependence as an**

**inherent trait of human lives, and the centrality of caregiving to guarantee social reproduction.** In addition, educating cities seek to promote a critical view of patriarchal society and its particular sexual division of employment. It is necessary to question the unequal distribution of care between men and women – as well as other intersectional axes of inequality, such as age, origin or class – and develop actions that foster joint responsibility when it comes to ensuring harmonious living and the guarantee of rights for everyone.

This involves critically reviewing many common places that generate inequality and neglect. It entails, for example, reviewing the criteria for evaluating access to kindergartens, so that the children of people working in the reproductive sphere, as in unsalaried housewives, are not penalised, nor are children whose parents work but are not in a regular situation from an administrative point of view. This involves the deconstruction of prejudices and stereotypes that trigger the rejection and stigmatization of groups and individuals, making an active effort to listen to the voices of people who are often not heard, and developing an intervention that encourages – and not just tolerates – diversity.

Along these lines, the 'Anti-Racist Education Programme for the Inclusion and Appreciation of Ethnic and Cultural Diversity' (Santos, Brazil) has seen the Ministry of Education carrying out actions in favour of anti-racist education since 2004, with the goal of giving representation and prominence to historically marginalised groups and valuing their tangible and intangible heritage. The programme includes training actions for the educational community and citizens that break down prejudices and highlight the contributions of different communities to Brazilian history and culture, networking with community agents, and political advocacy.<sup>45</sup>

44. More information on: <https://www.ahorainformacion.es/blog/espana-educacion-libertad-resistencia-a-la-educacion-para-la-ciudadania-parte-i/>.

45. More information on: <http://w10.bcn.es/APPS/edubidce/pubExperienciasAc.do?idexp=46165&accio=veure&idioma=3>.

## 2.5 Expanding educational opportunities

The right to education in the 21st century is inevitably an extended right with respect to what is set forth in legal texts. **So-called basic education is entirely insufficient as a guarantee of gaining access to the learning necessary for social and professional integration.** Access to educational opportunities is anticipated with early childhood education, extends throughout life and goes way beyond the framework of the school in the field of non-formal education and social learning experiences. Also important in this field is the vital role played by out-of-school activities as a key form of accessing knowledge and skills that are increasingly necessary for social and professional integration. In fact, the interruption of these activities due to the pandemic and lockdown have aggravated educational inequality, both in the formal and the non-formal spheres.<sup>46</sup> This right to education involves the participation of non-traditional agents in this task. This role is even more necessary due to the historical role played by the school as a reproducer of social inequalities and due to the persistence of educational inequality over time.<sup>47</sup> Likewise, the reduction in the value of education as a key factor of the social elevator underlines the need to consider strategies for its reactivation.<sup>48</sup>

The city is, once again, the meeting space in which to make this possible. It is in the field of local educational action where the best experiences of inclusive education have been developed, especially for groups which for various reasons cannot access the necessary educational experiences that guarantee the acquisition of basic skills to develop their capacities.<sup>49</sup> Among the groups that are left out of the educational pathway are young people who leave the educational system prematurely and face a specialised labour market, with few employment opportunities for unskilled workers and with high levels of temporary work and precarious conditions. An example of a good practice in the extension of educational opportunities is the commitment to favour the social and occupational reintegration of homeless people found in the 'PopRua Employability' programme (Sao Paulo, Brazil). This programme stems from the realisation that one of the main disadvantages faced by homeless people is them joining and remaining in the employment market, which means

that their activities and income come solely from the informal economy. The initiative, underway since March 2013, provides occupational training courses to these people and facilitates their job placement through strategic partnerships with companies.<sup>50</sup>

### Play it again, Sam! (Turin, Italy)

This is a project led by Turin City Council that sets out to foster educational success and prevent and counteract school dropouts. The idea is to support the coordination between teachers, the educational community and social organisations in the area. By these agents working together, the project lays on socio-educational activities at schools themselves and out-of-school activities at local organisations. The actions are adapted to the children's age groups (14 to 16 years old and 16 to 18 years old) and provide personalised educational pathways tailored to their specific needs: special education support, academic and career guidance, socio-emotional support, etc.<sup>51</sup>

Likewise, **there are forms of exclusion not necessarily associated with indicators of academic failure, but with reference models and stereotypes that exclude certain groups from accessing social options of upward mobility and positions of responsibility and prestige.** The still insufficient participation of women in technical degrees or in positions of management and responsibility is clearly an example of the need to expand the opportunities associated with this form of exclusion. From a gender perspective, there are numerous initiatives currently being carried out to foster the scientific education of girls and to highlight the contributions of women to the history of science. The organisation in several cities and at many schools of events related to the International Day of Women and Girls in Science or curricular and pedagogical reforms aimed at building a gender perspective in science teaching are good examples of this.

46. Bonal and González, 'The impact of lockdown on the learning gap'.

47. Bourdieu and Passeron, *La reproduction*; Shavit and Blossfeld, *Persistent Inequality*.

48. Martínez-Celorrío, *Innovación y equidad educativa*.

49. Sen, *Inequality Reexamined*.

50. More information on: <http://w10.bcn.es/APP5/edubidce/pubExperiencesAc.do?idexp=37746&accio=veure&idioma=3>.

51. More information on: <http://www.comune.torino.it/servizieducativi/adolescenti/sam/index.html>.

Meanwhile, the training needs of adults have multiplied to the extent that the generational gap in access to knowledge has widened and that vast layers of the population are excluded from access to the skills necessary not just for occupational integration, but also for their own social life. Data from the OECD's PIAAC survey, for example, reveals huge generational inequalities in knowledge and highlights the need to bolster adult education systems and, in general, lifelong learning. The challenge actually calls for an in-depth rethinking of the times of daily life, attention to the care and reproduction of life, and a response to the needs of leaving no one behind and providing training opportunities for this. **The digital divide is definitely a social divide**, which has been clear during the pandemic. Inequalities such as access due to territorial or economic have been exacerbated by the need for training to learn how to move around a digital setting, which is increasingly present and vital in our daily lives. With all this, the digitisation of society

should be considered as a means and not a purpose in itself. With a lack of direction and values, information and communication technologies end up as instruments that accentuate inequalities. An interesting initiative designed to provide training opportunities to rural areas is the 'Welcome to SAM Town (Sports, Art and Music Programme)' experience in Dangjin, South Korea. This programme creates learning spaces in which the development, planning and organisation corresponds to the communities themselves, with the support of the city council. It sets out to enhance people's quality of life and the functioning of villages through participation in educational, sports and cultural activities and the organisation of cultural events.<sup>52</sup>

The challenge once again underlines the need for various social agents, including companies, associations and public authorities, to create the necessary partnerships to extend lifelong educational and promote knowledge transfer between generations.



Viladecans (source: City of Viladecans)

52. More information on: <http://w10.bcn.es/APPS/edubidce/pubExperiencesAc.do?idexp=46245&accio=veure&idioma=3>.

### 3. Recommendations

This report highlights the possibilities and importance of local educational action to tackle the social inequality found in the everyday lives of citizens, and especially in the field of care. To summarise, these are the most important recommendations to ensure the development of a local educational policy aimed at equity:

**1 Develop policies to reduce in-school segregation of socially vulnerable groups.** Without social mixing, cohesion is not possible, nor is it possible to create interclass and intercultural networks capable of breaking the social isolation or the brutality of exclusion in global cities.

**2 Develop a public policy that is jointly responsible** with the reproduction of life and bolsters public services aimed at defeminising care in everyday life and eliminating the inequalities resulting from unequal distribution.

**3 Integrate the centrality of care into educational contexts** to guarantee welfare and community life, the awareness of interdependence between people, and the necessary joint responsibility of families, communities and institutions.

**4 Develop actions and programmes that educate and raise awareness** of the need for quality employment in the care industry, which prevent the abuse, precariousness and defencelessness of female workers.

**5 Develop actions that foster women's access** to technical degrees or manual professions in which they are underrepresented.

**6 Understand the commitment to sustainability** as a cornerstone to guaranteeing public health and taking care of present and future citizens. Educate and sensitise people to understand the social factors that condition health, the role that inequalities and poverty play in physical and mental illness, as well as to foster knowledge and practices that are conducive to a healthy life.

**7 Integrate education policy into coordinated actions with other sectoral policies** and with the necessary flexibility to respond to the needs of the most vulnerable population. Educational policy should be part of an integrated system of social policies that prioritises the needs of the most disadvantaged groups.

**8 Develop educational programmes and policies in coordination with civil society agents** and with other levels of public administration (regional and national governments) in order to maximise the scope and extent of reforms.

**9 Create spaces for harmonious living** in which people of different generations and cultures interact, which in turns helps foster intergenerational and intercultural encounters and interaction, so that they complement and bolster each other, thereby encouraging more cohesive, inclusive and supportive societies.

**10 Develop actions, programmes and strategies aimed at reinforcing the critical learning of citizens.** 21st-century educational policy should know how to detect the truthfulness of data and provide the young people and adults with instruments to critically read information and knowledge and combat prejudices, rumours and stereotypes.

**11 Understand the right to education as an expanded right**, which goes beyond formal education and calls for specific responses on a local level to provide lifelong opportunities, and especially for groups at risk of social exclusion (SDG 4).

# References

- Agenjo, Astrid. *Economía Política Feminista: sostenibilidad de la vida y economía mundial*. Madrid: Catarata – Fuhem, 2021.
- Atkinson, Anthony B. *Inequality: What Can Be Done?* Cambridge, Massachusetts: Harvard University Press, 2015.
- Bogino, Victoria. '¿Cómo se hace frente al desclasamiento social educativo en España? Tipología de los perfiles sociales y lógicas estratégicas de los titulados treintañeros en tiempos de crisis'. *Papers. Revista de Sociología* 105, no. 1 (July 2020): 29-56. <https://www.researchgate.net/publication/334765067>
- Bonal, Xavier. 'Education policy and school segregation of migrant students in Catalonia: the politics of non-decision-making'. *Journal of Education Policy*, 27 no. 3 (2012): 401-421. <https://doi.org/10.1080/02680939.2011.645168>
- Bonal, Xavier and Sheila González. 'The impact of lockdown on the learning gap: family and school divisions in times of crisis'. *International Review of Education* 66 (September 2020): 635-655. <https://doi.org/10.1007/s11159-020-09860-z>
- Bonal, Xavier and Aina Tarabini. 'Being poor at school: exploring conditions of educability in the favela'. *British Journal of Sociology of Education* 37, no. 2 (2016): 212-229. <https://doi.org/10.1080/01425692.2014.924394>
- Bourdieu, Pierre and Jean-Claude Passeron. *La reproducción. Elementos de una teoría del sistema de enseñanza*. Paris: Ed. Minuit, 1970.
- Carrasco, Cristina. 'Mujeres, sostenibilidad y deuda social', *Revista de Educación*, special issue (2009): 169-191. [http://www.revistaeducacion.es/re2009\\_08.htm](http://www.revistaeducacion.es/re2009_08.htm)
- Cascio, Elizabeth, Nora Gordon, Ethan Lewis, and Sarah Reber. 'From Brown to busing'. *Journal of Urban Economics* 64, no. 2 (September 2008): 296-325. <https://doi.org/10.1016/j.jue.2008.02.001>
- Castells, Manuel. *La cuestión urbana*. Madrid: Siglo XXI, 1979.
- Chant, Sylvia, ed., *The International Handbook of Gender and Poverty: Concepts, Research, Policy*. Cheltenham: Edward Elgar, 2010.
- \_\_\_\_\_. *Gender, Generation and Poverty: Exploring the 'Feminisation of Poverty' in Africa, Asia and Latin America*. Cheltenham: Edward Elgar, 2007.
- \_\_\_\_\_. *Gender, Urban Development and Housing*. New York: UNDP, 1996.
- Durán, María Ángeles. *La riqueza invisible del cuidado*. Valencia: Publicaciones de la Universidad de Valencia, 2020.
- \_\_\_\_\_. *La jornada interminable*. Barcelona: Icaria, 1986.
- Kabeer, Naila. *Social exclusion: concepts, findings and implications for the MDGs*. Brighton: University of Sussex, 2003. <https://nailakabeer.net/2003/09/23/social-exclusion-concepts-findings-and-implications-for-the-mdgs/>
- Martínez-Celorio, Xavier. *Innovación y equidad educativa*. Barcelona: Octaedro, 2019.
- Musterd, Sako, Szymon Marcinczak, Maarten van Ham, and Tiit Tammaru. 'Socioeconomic segregation in European capital cities. Increasing separation between poor and rich'. *Urban Geography* 38, no. 7 (September 2016): 1062-1083.
- Musterd, Sako and Wim Ostendorf. *Urban Segregation and the Welfare State: Inequality and Exclusion in Western Cities*. New York: Routledge, 1998.
- McDowell, Linda. *Gender, Identity and Place: Understanding Feminist Geographies*. Minneapolis: University of Minnesota Press, 1999.
- Pérez Orozco, Amaia. *Subversión feminista de la economía. Aportes para un debate sobre el conflicto capital-vida*. Madrid: Traficantes de sueños, 2014.
- \_\_\_\_\_. *Perspectivas feministas en torno a la economía. El caso de los cuidados*. Madrid: Consejo Económico y Social España, 2006. <https://www.researchgate.net/publication/309669736>
- Picchio, Antonella. *Social Reproduction: the political economy of Labour Market*. Cambridge: Cambridge University Press, 1992.
- Prats, Fernando, Yayo Herrero, and Alicia Torrego. *La gran encrucijada. Sobre la crisis ecosocial y el cambio de ciclo histórico*. Madrid: Libros en Acción, 2017.
- Rico María Nieves and Olga Segovia, eds., *¿Quién cuida en la ciudad? Aportes para políticas urbanas de igualdad*. Santiago de Chile: CEPAL, 2017. [https://repositorio.cepal.org/bitstream/handle/11362/42424/6S1700617\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/42424/6S1700617_es.pdf)
- Río, Sira del and Amaia Pérez Orozco. 'Una visión feminista de la precariedad desde los cuidados', *IX Jornadas de Economía Crítica*, Madrid: UCM, 2004.
- Sassen, Saskia. *Expulsions. Brutality and Complexity in the Global Economy*. Cambridge, Massachusetts: Harvard University Press, 2015.
- Sen, Amartya. *Inequality Reexamined*. Oxford: Clarendon Press, 1992.
- Shavit, Yossi and Hans-Peter Blossfeld, eds., *Persistent Inequality: Changing Educational Attainment in Thirteen Countries*. Boulder: Westview Press, 1993.
- Tammaru, Tiit, Szymon Marcinczak, Maarten van Ham, and Sako Musterd, eds., *Socio-Economic Segregation in European Capital Cities: East Meets West*. London: Routledge, 2015.
- Tedesco, Juan Carlos. 'Educación y desigualdad en América Latina y el Caribe. Aportes para la agenda post 2015'. *Perfiles Educativos* 39, no. 158 (October- December 2017): 206-24.



Supported by:



**Funded by  
the European Union**

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of UCLG and UCL and do not necessarily reflect the views of the European Union.



**Diputació  
Barcelona**

This document was produced with the financial support of the Barcelona Provincial Council. Its contents are the sole responsibility of UCLG and UCL and do not necessarily reflect the views of the Barcelona Provincial Council.



**Sweden  
Sverige**

This document has been financed by the Swedish International Development Cooperation Agency, Sida. Sida does not necessarily share the views expressed in this material. Responsibility for its content rests entirely with the authors.



**UK Research  
and Innovation**

This document was produced by UCLG and the “Knowledge in Action for Urban Equality” (KNOW) programme. KNOW is funded by UKRI through the Global Challenges Research Fund GROW Call, and led by The Bartlett Development Planning Unit, UCL. Grant Ref: ES/P011225/1