Gender and sustainability. Raising primary school children’s awareness of gender stereotypes and promoting change in their attitudes.

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Abstract. This paper examines one aspect of the importance of the concept of gender for the promotion of sustainable communities from the perspective of the role of education. It is argued that it is important and possible to deconstruct gender stereotypes already present at an early age in order to build counter stereotypes that will help individuals pursue their own personal pathways without being subjected to prejudice and discrimination. A small-scale research project conducted in a primary school in Italy, using semi-quantitative methods of data collection and analysis, is proposed as an example of how learning activities can create awareness of gender stereotypes and promote changes in attitudes in young children.

Keywords: gender, sustainability, stereotypes, awareness, perspectives

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1. Introduction

Hempel (1998) describes a sustainable community as being healthy inasmuch as it maintains “social and ecological balance” in terms both of the lives of individuals and their collective enterprises and the endeavour to build lasting, sustainable forms of justice, prosperity, security, and environmental quality based on the passage from “vision to action”. The question of gender equity is crucial for each of these characteristics. All cultures elaborate constructs on the basis of the biological differences between women and men in order to build a set of social norms and expectations concerning what behaviours, roles and activities are both typical of and appropriate for women and men, together with what rights, power and resources they should possess or access.

In all kinds of communities, the social construction of the roles of women and men has, both historically and currently, continued to create gender-based disparities that discriminate and exclude women, thereby frustrating their personal development and consequently that of sustainable communities (Shiva, 1989, 1994). The question is both one of personal injustice in denying women the right to fully develop their potential as individuals and at the same time denying society the important benefits of their contribution to the wellbeing of the community. While on the one hand much sustainability literature is concerned with the unsustainable over-exploitation of natural resources, it is equally unsustainable that gender biases should cause exclusion and thereby under-exploitation of such important human resources. Over the past twenty years a number of instruments, such as the Gender-related Development Index (GDI), the Gender Empowerment Measure (GEM) and the Gender Inequality Index (GII), have been developed in order to promote gender-oriented analysis of the characteristics of societies and institutions with regard to sustainable ways of being and processes underlying sustainability policy and practices at international, national, regional, local and personal levels (Permanyer, 2011).

At the same time, an increasing number of publications have addressed both theoretical questions concerning sustainability and sustainable development in terms of gender, economics and environment within the broad field of socio-ecological research and produced gender-based empirical studies on various aspects and consequences of the environmental consciousness and behaviour of women and men (Agarwal, 1997, Reeves & Baden, 2000, Casimir & Dutilh, 2003, Swedish Ministry of Sustainable Development, 2006, OECD, 2008, Silverstein & Sayre, 2009, Mwangi, Meinzen-Dick & Sun, 2011, Cruz-Torres & McElwee (eds), 2012).

All studies in this field recognise that gender is a dynamic concept and thereby subject to change, both through a diversification of its manifestations - which risks consolidating certain aspects and introducing others while maintaining gender inequity - and also in terms of different forms of action designed to raise levels of consciousness and modify underlying paradigms. In this respect, the role of education is seen as an essential aspect of the endeavour to create awareness and promote positive change within all age groups and, in particular, for young children. Gender-based attitudes are socially constructed and learned through educational agencies of all kinds: formal (such as schools and universities), non-formal (such as families and workplaces) and informal (such as social relationships and recreational activities). This paper describes a small-scale research project conducted with primary school children and designed both to raise their levels of awareness of gender stereotyping and measure eventual changes in their points of view concerning gender stereotypes and possible counter stereotypes in three areas: personal characteristics, recreational activities and professions.
2. Background to the study

The research was conducted in a primary school in Brixen, a town in the South Tyrol area in the North East of Italy and involved in two classes comprising a total of 38 children (20 girls and 18 boys) of 8 and 9 years of age, 5 female teachers and 26 parents (11 fathers and 15 mothers). The sample is obviously small and has no pretence at having general statistical validity in terms of children's or adults' attitudes, but is rather an attempt to explore how learning activities can address the question of stereotypes with a view to bringing them to the surface and therefore rendering them potentially subject to reflection and change. Each step was conducted by Nadia Lucchini as part of work carried out during teaching practice and as part of the elaboration of her degree thesis.

In a first phase, the children were interviewed in order to ascertain if they were influenced by already existing gender stereotypes in terms of adjectives used to describe personal characteristics and whether they were typically associated with a particular gender, recreational activities considered typical of a given gender and professions considered as the domain of one gender or another. The aim was to establish the areas to be focussed on but not use an existing questionnaire or prepare one a priori so as allow the children's most commonly shared ideas to freely emerge and not predetermine examples to be considered, attitudes or outcomes. Subsequently a questionnaire was prepared in order to elicit specific responses to questions related to the attitudes and opinions that emerged during the interviews. The answers to the questions posed were then used to plan a series of learning activities designed promote reflection and awareness concerning stereotypes, prejudice and discrimination with particular reference to the area of recreational activities. After these activities the questionnaire was used once again to determine if there had been a change in attitudes and opinions. At the same time, a parallel questionnaire was used to ascertain the points of view of teachers and parents concerning the same areas.

The research methodology employed combined both quantitative and qualitative elements within a perspective of reciprocal interdependence. The initial emphasis was on allowing the children's ideas to freely emerge during the interviews in order to then create the instrument necessary to gather more quantitative data (albeit with relatively limited samples) that could be comparable for the groups of children, teachers and parents. Statistical analysis then permitted in particular a comparison between the attitudes of girls and boys. The results obtained were then used to build the specific reflection and awareness-raising activities proposed.

Although not involving a medium or long-term longitudinal study, the approach used during the activities was based on the methodology of action research (Lewin, 1946), combining intersecting cycles of planning, action, observation and reflection. Data collection during the activities involved field notes and audio recordings. Each new activity was developed on the basis of the observation of the children during the previous one. The results of the questionnaire re-used after the series of activities was finished were then analysed using techniques typical of quantitative research procedures.

The questionnaire used for the children contained closed questions constructed on the basis of a Likert attitude scale with values ranging from 1 to 7, with 1 corresponding to “male” and 7 to “female” or 1 corresponding to “yes” and 7 to “no”, in all cases with reference to the three areas of personal characteristics, recreational activities and professions. The questionnaire used for the teachers and the parents contained open questions that encouraged the free expression of ideas or opinions.
The results of the first questionnaire used with the children were tabulated via Excel for the mean values attributed by the children to each of the variables. The data were analysed using the SPSS (Statistical Package for Social Science) programme in order to determine standard deviation for each mean value and compare answers given by girls and by boys. The results were then analysed independently of gender categories through ANOVA (Analysis of Variance), whereby relevant data must demonstrate a Sig. < 5 and a Partial Eta Squared > 0.15 and thereby show a difference between the attitudes of females and males. Where the results do not satisfy these criteria, the attitudes that emerge are common to both genders.

3. The results of the questionnaires

From the initial analysis of the questionnaires, the adjectives “weak” and “shy” are considered by both groups as typically characteristic of females and “courageous”, “strong” and “lively” as typical of males. Although it is important to remember that such words spontaneously emerged from the initial interviews from the children and were not pre-selected on the basis of the assumptions of the researcher, at the same time many studies have shown how one of the principal reasons for such shared gender bias would seem clearly linked to the stereotyped characters and images widespread in the literature for children to which they are accustomed from an early age (Fox, 1993, Kortenhaus & Demarest, 1993, Rutledge, 1997). Biemmi (2010) shows how “I have seen little girls of 18-20 months spend hours and hours taking out of a bag a series of toy cars, ships and trains, putting them in line, […] and moving them with the same delight and concentration as little boys. […] Later this phenomenon disappears [as] children learn to request the ‘right’ toy because they know that they will be denied the ‘wrong’ one (p. 90). In the same way, “play with dolls” was considered a clearly female activity, since from an early age little girls are encouraged to “take care” of dolls and thereby develop a particular sensibility toward child care, something considered inappropriate for boys. In a study conducted in Turin “Games for boys, for girls … and for both”, of 143 boys between 6 and 12 years of age interviewed only five said they played with dolls. As one seven year old said: “I play with my sister’s dolls, but Daddy doesn’t want me to” (Venera, 2005, p. 165). By the same token, “playing at being Mummy or a Princess” was considered an exclusively female game.

As Ricchiardi (2005) puts it, “the absence of playing with dolls can have decidedly negative consequences. In playing family roles the child can change roles, take on the point of view of the adult, see situations from different perspectives in a way otherwise not possible. We can frequently observe games in which children reproduce negative experiences (such as being scolded) with their parents. In the absence of the same capacity as the adult to verbalise experiences, the child needs other more simple ways of
elaborating them. Reliving interactions more or less positive with parents through playing with dolls is something of great importance” (p. 126).

Both “artistic gymnastics” and “volleyball” were associated with girls by both genders. Here we can see the influence of sports models proposed by parents to their children. “Take, for example, a ball. A girl will be asked to throw it, gracefully and carefully, while it seems ‘natural’ that a boy will kick it energetically” (Ulivieri, 2007, p. 91). “Football” and “karate” were considered inappropriate for girls. Among the activities considered, football was considered the least appropriate of all. On the other hand, “dance” was widely considered unsuitable for boys, probably because gradually associated with characteristics such as grace, elegance and delicacy, qualities generally not encouraged in boys, for whom activities should permit the development of ”male personalities: tough, aggressive, rough, violent” (Ulivieri, 2007, p. 91).

Out of 26 professions considered by the children, only 8 reached the mean threshold value of 4, showing that both boys and girls had indicated as typically female less than one third. This suggests opinions widely-held and shared by both genders and could be taken to express the idea that work in general is more suited to men than to women. More detailed analysis shows that jobs requiring strength, astuteness, ingenuity, calculating and within the field of transport are considered typically male. Professions in which the body is instrumental or exhibited or which are essentially static are indicated as typically female. The professions considered most typically male are “pilot”, “secret agent”, “soldier” and “electrician”, while those that are female are “fashion stylist”, “volleyball player”, “model” and “cashier”. As Ruspini (2003) asserts, parents encourage and push their children’s development so that they “participate in activities with specific gender connotations. For example, boys are much more like to be given tasks for repairing and maintenance in the house and with the development of skills outside the domestic sphere, while girls are mostly required to collaborate in activities such as cleaning, washing and cooking” (p. 19).

As regards the answers to questionnaires of the teachers and the parents, two opposing lines of thought emerge. The majority is aware of a problem concerning gender discrimination and consider this an impediment to realising one's potential for many individuals. Moreover, they believe that the school should play an important role in removing the stereotypes that cause discrimination. However, it clearly emerges that almost all the parents do not have a clear idea of what the school is or can do in this respect. On the other hand, a minority of both teachers and parents do not consider gender biases as harming children’s development. On the contrary, in some cases these are deemed to be important models that enable the individual to grow in the “right” way and fulfil roles considered socially appropriate.

4. The learning activities

On the basis of the results that emerged from the questionnaires, it was decided to construct learning activities based on games and recreational activities carried out in the children’s free time, since these are most common to their daily lives, and to concentrate on the stereotypes that were most widespread and deeply-rooted. In particular, two male (“playing football” and “playing with toy cars and motorbikes”) and two female (“playing volleyball” and “dancing”) stereotypes were selected. The series of activities was intended as three phases: analysis of the stereotype, elaborating the stereotype through drawing, deconstruction of the stereotype and construction of an counter stereotype.

During the first phase the children read stories based on the lives of four real-life
people: a female footballer from Florence, a female pilot from Rome, a male volleyball player from Trento and a male dancer from Naples. The stories were written as biographies with two distinct parts. In each case, the first part contained activities and games that tended to confirm the expectations of the stereotype, while in the second part emerged the counter stereotype represented by each character and the professions they have today.

In this way, the pupils began the series of activities by activating a part of their given knowledge and then gradually discovering new information, thereby favouring a process of assimilation of the new to the given. Thus, they are “able to act on them, integrate and correlate, destructure and reassemble” (Gattico, 2005, p. 176) the information they now possess. This process was facilitated by a methodology of cooperative learning based on the jigsaw technique whereby each member of a previous group brought information to the members of the new group of which s/he was a part. The information exchange and the analysis of the situation were built around the consideration of three central factors in each story: the role of peer groups and that of the family in influencing or determining choices, and the particular characteristics of the protagonist in bowing to pressure or demonstrating resilience and determination to make and maintain personal choices.

In the second phase, the pupils were asked to divide a sheet of paper in four parts and draw in each one representing the four salient moments or events in the story read, adding captions to explain what was being represented. Drawing is a particularly powerful way of elaborating new concepts. “Creativity is a multi-fold process [...] in that it is a psychic act that engages the individual on the intellectual, affective, ethical and social levels” (Rosati, 1997, pp. 52 - 53).

During the third phase the children were presented with four new stories that contained the same activities but with different developments. Whereas the original stories contained gender stereotypes that evolved into counter stereotypes, in this case the stories tell of girls and boys forced to abandon their desires because of peer and family pressure based on prejudice. The task presented was to work in groups in order to change the development of the stories so as to produce a positive outcome. In this way the children are encouraged to autonomously deconstruct the stereotype and build a counter stereotype (Rubin, Paolini & Crisp, 2013) through their own narration. They invent new stories but “the relationship with reality is constant and, as in a circular process, the outcomes that are a product of their fantasy create a new way of seeing reality, through broadening their perceptions, and enable them to evaluate it critically and thereby transform it” (Falcinelli, 1997, p. 88).

If during the first and second phase there is a process of assimilation of the new - in terms of non-stereotypical models - to the given, the third phase promotes the stable assumption of different terms of reference and perspectives and thereby a process of accommodation (Piaget, 1961) producing lasting change in mental schemata.

5. The results after the learning activities

One month after the learning activities the initial questionnaire was again used to see to what extent and what types of change had been brought about. The results of the first use of the questionnaire (time 0) were compared with those of the second (time 1) in terms of the same categories of adjectives relating to personal characteristics, recreational activities and professions. What follows contains only some examples of what emerges.
The results show a change of opinion in the boys as regards the adjective “weak” (F(1,18)=4.59, η2p=0.20). This characteristic was initially considered almost uniquely female (6.11±1.36), whereas the value declines in such a way as to get close to being neutral (4.78±1.30). As regards the girls, while the adjective “strong” was almost entirely male (1.45±0.68), their opinion shows a change in the values attributed (2.18±1.25). A similar change involves the adjective “affectionate”, previously considered inappropriate for a male (4.54±0.72) and now perceived differently (2.81±0.65).

A change also occurs as regards “artistic gymnastics” (F(1,18)=5.80, η2p=0.24) and “volleyball” (F(1,18)=23.68, η2p=0.56), both previously considered almost exclusively suitable for girls with values at 6.45±0.45) and (6.00±0.44). In both cases the levels drop appreciably, although “artistic gymnastics” remains linked particularly to females with a value of (5.09±0.36).

Changes also occur in respect of “play with toy cars and motorbikes” (F(1,18)=29.34, η2p=0.62), from (1.53±0.34) a (3.39±0.32; “riding a bicycle” (F(1,18)=20.88, η2p=0.53), from (3.79±0.46) to (1.43±0.25); “playing football” (F(1,18)=50.39, η2p=0.73), from (5.84±0.38) to (2.00±0.42); “karate” (F(1,18)=21.82, η2p=0.54), from (5.69±0.32) to (2.94±0.55). In all cases, an activity previously considered unsuitable for girls has been reconsidered and now appears appropriate. The same also occurs for “dancing” (F(1,18)=14.39, η2p=0.44), an activity first held to be characteristic of females (5.04±0.48) but for which the values have been decidedly modified (3.02±0.38).

Both boys and girls have also clearly changed opinion concerning various professions. For example, “volleyball player” (F(1,18)=17.41 goes from a high level of association as a female sport (5.89±0.29) to much lower values tending towards neutrality (4.70±0.30). At the same time, “pilot”, although it maintains a certain male gender bias, sees a rising level of suitability for females, (1.54±0.17) to (2.70±0.30). Analysis of values of particular statistical significance, shows that the girls have changed opinion about various professions such as “footballer” (F(1,18)=19.42, η2p=0.51), “cashier” (F(1,18)=5.90, η2p=0.24), “soldier” (F(1,18)=7.56, η2p=0.29) e “stylist” (F(1,18)=4.25, η2p=0.19). A particularly noticeable change regards, for example, “footballer”, a profession initially considered almost exclusively male, with a change from (1.63±0.36) to (3.81±0.26), while all the other examples show a tendency to much more neutral values. For the boys, similar changes have taken place for the professions “architect” (F(1,18)=5.27, η2p=0.22), “electrician” (F(1,18)=3.57, η2p=0.16), “shopkeeper” (F(1,18)=3.75, η2p=0.17), “police(wo)man” (F(1,18)=4.70, η2p=0.20) and “computer programmer” (F(1,18)=4.41, η2p=0.19), each of which move from high male-biased values toward neutrality.

6. Conclusions

The research conducted shows that at the outset both of the classes in which the questionnaire was used were already highly influenced by gender stereotypes within the areas of adjectives relating to personal characteristics, recreational activities and professions. Such a situation is in line with a wide range of literature containing studies over the past 40 years and demonstrating how environmental conditioning is heavily responsible for building and perpetuating stereotypes and how these stereotypes deprive women of the chance to play many and important roles in society, thereby depriving communities of women's vital contribution to the social and ecological balance necessary for sustainability.

In Italy, the country where this research was conducted, analyses have been conducted, for example, of children's literature and school...
textbooks that show girls as being alone and helpless and boys as being adventurous and active (Gianini Belotti, 2002; Biemmi, 2010), cartoons that present the male as a hero and the female as an object of desire (Ulivieri, 2007), games directed at either boys or girls on the basis of traditional male and female roles (Ricchiardi & Venera, 2005), the automatic allocation of domestic roles to women (Romano, Mencarini & Tanturri, 2012), television that typically presents women in roles that are humiliating while men are dominant and intelligent (Zanadro, 2010), and the grammars of language systems that prioritize masculine in respect of feminine gender (Sabatini, 1993).

These are only some of the innumerable ways in which children come into contact with stereotypical models and images and the initial results of the research clearly demonstrate the consequences in terms of well-defined mental schemata that lead to precise distinctions between male and female roles and thwart the natural development of individuals in terms of their inclinations and aptitudes. If the creation of a sustainable community depends on promoting fulfilling lives for individuals and harnessing them to collective enterprises, thereby building lasting, sustainable forms of justice, prosperity, security, and environmental quality, then a new paradigm based on gender equality in terms of opportunity and achievement is a priority.

Clearly, building this paradigm requires concerted action at all levels of society, but the role of education, particularly at the level of early years and primary school, must be considered of vital importance. Gender issues are present in the lives of every individual and “social, cultural, religious and political groups practice gender education that inevitably conditions lives without even posing this objective” (Leonelli, 2011, p.2) or indeed being aware of what they are doing in this respect. Recent research by the National Bureau of Economic Research suggests that schools may also be responsible for this in various ways and that gender bias at primary school may have long-term implications for pupils (Lavy & Sand, 2015). The study examined various groups of students who took two examinations, one of which was marked blind by outside examiners while the other was marked by teachers who knew the students’ names. In Mathematics, girls outperformed boys in the examination with blind marking, whereas boys outperformed girls when the assessment was carried out by teachers who knew the children's names, thereby suggesting that they had overestimated the boys' abilities and underestimated those of the girls. The authors conclude that biased behavior on the part of teachers in the early years of schooling has long-term implications for occupational choices and earnings at adulthood and show that the impact is greater for children from families where the father is more educated than the mother and most damaging for girls from a low socioeconomic background.

It is therefore vital that schools should become places that consciously promote gender education in such a way as to “respect the relationship between identity and difference that constitutes our very being, encourage pluralism, awareness and critical attitudes (Mapelli, Bozzi Tarizzo & De Marchi, 2001, p.12). After the learning activities described above, significant changes in attitude emerged. This can be taken as a confirmation that, if educational processes and agencies plan and pursue educational pathways with such characteristics, then it is possible to move society from a still negatively gender-biased and thereby inevitably discriminatory and impoverishing framework of reference toward a more sustainable, positively gender-based, empowering and enriching trajectory.
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