The Implementation of Character Building to Improve Resident Participation in Waste Management

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Abstract. Household waste commonly dominates the municipal waste composition, indicating a vital role of residents’ participation in solving waste problems. Various efforts have been made to encourage resident’s participation. However, many approaches implemented cannot keep participation sustainable. Previous studies showed that educating residents through nurturing moral values is influential in improving waste management behaviour. Meanwhile, the moral value becomes the core of character building, implying that character building could have a role in resident-based education to enhance waste management behaviour. In fact, character building can change individual behaviour sustainably. Thus, this study aimed to figure out the possibility of implementing character building to nurture sustainable waste management behaviour and investigate how character-building was implemented. Using a case study approach, we explored a resident-based education in Neglasari, Bandung, Indonesia, that implemented moral value as the educational strategy. This study found that some primary activities were conducted to transfer moral value. The learning activities were focused on nurturing moral knowing, moral feeling, and moral action as central components of character building. However, implementing character building seemed to take time and required iteration to get a sustainable change in the behaviour. Nevertheless, it is worth to continue to gain significant benefits.

1. Introduction

Human growth and economic development keep increasing from time to time, causing the inevitable escalation of waste generation. Waste generation in Indonesia was reaching up to 8 million tonnes/day in 2018 [1]. Without any significant effort to handle, the waste generation will keep increasing uncontrollably. According to the BPS-Statistics Indonesia [1], the most dominant generator of municipal waste is from residential, meaning that resident participation in waste separation at source is critical [2,3]. Therefore, resident-based education toward waste management is required to encourage resident participation while also enable them to have proper knowledge and competence doing waste management [4,5]. Unfortunately, many resident-based educations cannot make the participation long-lasting. Once the education ended, the participation rate will be decreased. Thus, it is crucial to find a robust resident-based education concept to give a sustainable impact on waste management behaviour.

Previous literature showed that personal moral norms nurtured through moral value approaches had positive effects of waste separation behaviour [6–10]. It is considered the most crucial predictor of waste separation behaviour [6,9]. Personal moral norms lead to perceived responsibility that encourages the resident to practice waste separation [8,9]. Lickona [11] introduced the term character to educate moral value, defined as operational value, where personal value is conversed into action [11]. Frye et al. [12] described character education as a planned activity to help individuals to recognize, care, and act based on values. The moral value-based activity can be sustainable [10] when
it combines three essential components: moral knowing, moral feeling, and moral action [11]. When individuals know the moral reason for a particular activity and aware of moral value about the activity, they will develop their moral feeling, including conscience, empathy, and loving the good things [11]. When their competence, willingness, and habits support the moral knowing and moral feeling, sustainable behaviour will occur [11]. Sustainable participation in waste management was seen in Trinidad & Tobago, where the residents would participate due to their environmental awareness and their love for their environment [13]. Another example is like what happened in Malaysia, where the residents in religious communities have participated in waste management activities for more than two decades due to moral-value and beliefs they hold [10]. According to Lickona [11], character-building consists of three interrelated components in the personal domain: moral knowing, moral feeling and moral action. The educational approach is intended to build character by improving the three components. According to Social Cognitive Theory (SCT) by Bandura [14], the educational approach is the environment domain, while Moral Action is in the behaviour domain. Meanwhile moral knowing and moral feeling are regarded as the personal domain. As stated in SCT, environmental domain can be conditioned to intervene in both personal and behavioural domains, while both intervened domains have reciprocal determination [15,16]. The correlation among components is presented in Figure 1.

![Figure 1. The relationship among components in character building.](image)

Building personal character can encourage new behaviour to be sustainable due to the combination of forming behaviour through internal and habituation [11]. Sustainable behaviour is vital to ensure sustainable participation in waste management [13]. Therefore, this study figured out the possibility of implementing character building to improve waste management behaviour sustainably. Also, this study explained how the character-building process in Sub-District Neglasari, Bandung, Indonesia, can lead to resident participation in waste management. Thus, the research questions of the study are, 1) How is the implementation of character building to improve waste management behaviour in Sub-District Neglasari, Bandung, Indonesia? 2) How is the process of the character-building improve waste resident participation toward waste management?

2. Research methodology

This study is a qualitative study using a deductive approach. The strategy is a case study with the object of the study is the resident-based education about waste management in Sub-district Neglasari, Bandung City. The resident-based education is integrated into KBS (Kawasan Bebas Sampah – Zero Waste Area) Neglasari program. The data was collected in June-July 2020 through field observation and in-depth interviews with 6 key stakeholders in the educational activity. The informants consisted of 5 PANSUS (Pasukan Khusus – Special Force) members and 1 officer from the sub-district Neglasari office who has responsibility for the KBS program. The recorded interviews were transcribed, and the transcripts were then content analysed using the NVIVO R1 tool. It was used character-building concept and SCT theory to guide the analysis and data synthesis. The integration of character building and SCT concept was used to develop initial coding and axial coding. The axial coding was also created from the emerging themes identified from the data. The interview data were triangulated with field observation to improve validity and reliability.
Case study overview
KBS Neglasari was a part of the KBS programs conducted by Bandung Local Government to campaign KANG PISMAN (Kurangi Pisahkan Manfaatkan), a local tagline representing the 3R goal. The residents within the area are expected to actively participate in waste separation at their home eventually to be recycled at the communal place. Resident-based education is to be one of the crucial activities conducted to encourage resident participation [17]. Even though local government’s official assistance in the KBS Neglasari was ended in 2020, the KBS decided to keep continuing the education process independently by forming a PANSUS representing 7 RWs within Neglasari areas. The program started in early year of 2020 but was postponed when the covid-19 pandemic started spreading uncontrollably since March 2020. The PANSUS is responsible for handling the education and the communal waste management process.

3. Result and discussion
Personal character toward the environment contributes to the improved resident participation in waste management through moral obligation and responsibility cultivation [8,9,18]. According to the interview, it is found that some approaches were carried out in the educational process. The educational approaches and their activities are presented in Table 1. The educational approaches formed environmental conditioning through certain educational activities that lead to the changing behaviour toward waste management. Some educational activities are conducted in KBS Neglasari, Bandung City, targeting their residents. The education is started from Karang Taruna (youth organization within the area), PKK (women local organization), neighbourhood chiefs, Hamlet Chiefs, and sanitation workers. They are expected to help PANSUS give a role model and socialize the program to the residents. The whole objectives of the education are to nurture their morality who love and care for their environment.

Table 1. Educational approaches and the educational activities conducted in KBS Neglasari Bandung, with personal & behavioural component as the focus of the education

| No. | Educational Approaches | Educational Activities | Personal and Behavioural Components Focus |
|-----|------------------------|------------------------|------------------------------------------|
| 1.  | Door to Door Education (DTDE), Leader Meetings, Informal Discussion, Personal Approach and Heart to Heart talk | Knowledge Sharing focused on environmental knowledge & environmental value sharing | Moral Knowing (Knowing Moral Values & Moral Awareness) |
| 2.  | Habituation | Knowledge sharing focused on real stories about other people’s bad experience because of waste | Moral Feeling (Conscience & Empathy) |
| 3.  | Door to Door Check, Supervision, Accompaniment | | Moral Action (Habits & Competence) |

3.1. DTDE, Leader Meetings, Informal Discussion
Educational approaches conducted to focus on moral knowing include DTDE, leader meetings, and informal discussion embedded in the scheduled meetings in the KBS Neglasari. The educational activities were knowledge sharing focusing on environmental knowledge & environmental value sharing, such as taking care of the natural environment, daily waste generation in Bandung city, and the current condition of landfills, which is almost full. This educational stage allowed the residents to know the correlation between their behaviour toward waste problems, know the moral values behind waste problems, and understand how to implement the value in their life [11]. The sharing content did not discuss local regulation toward waste management, as conducted by other KBSs [17]. The knowledge sharing was heavily emphasized to the natural environment values relation. The PANSUS tried to nurture resident awareness through understanding waste management value. This approach is similar to the essence of moral awareness, the ability to understand, realize, and believe the value and situations related to it [19].
3.2. Personal approach and heart to heart talk

The educational activities conducted to nurture moral feelings were informal talk, allowing personal approaches implemented, such as casual conversation when PANSUS members accidentally met the residents on the streets. This approach was sometimes implemented in DTDE activities [e.g. 17] to ease the knowledge internalization process. In this step, the educators can touch their conscience to have a responsibility toward their environment. Formulating this conscience would cultivate internal motivation to lead personal to the morality scope, resulting in feeling guilty when they do not conduct it [8,20]. Lickona [11] stated that this approach will be able to cultivate responsibility to do the right thing. The educators conducted Heart to Heart approach to share values related to feeling and other people’s conditions. For example, they told the story about a sanitation worker’s experience when being punctured by skewers from the household waste. They also told the story about how sanitation workers were struggling in picking up all the trash from one house to house using limited tools due to the narrow road within the neighbourhood. Another story is related to how environmentalists have struggled to keep nature sustainable to be a legacy for the next generation. These knowledge-sharing activities will nurture their awareness while also developing their empathy, one of the moral feeling factors stated by Lickona [11]. Even though there is potency to cultivate moral feeling by nurturing empathy and conscience in education process, the step should be continued to promote loving the good. The step is reached when individuals start having a sense of need and love having good behaviour, instead of doing particular behaviour due to obligation or burden [11]. Getting the step will make the behaviour more sustainable. Sustainable behaviour due to loving the environment has been proven by the resident community in Trinidad & Tobago [13] and religious communities in Malaysia [10,21]. The waste separation behaviour was long-lasting without any further educational treatment because the major driver is feeling care and love for their environment [13].

3.3. Habituation

The habitual formation is applied to complement the character-building process. The habituation process is aimed to build competence and habits toward intended behaviour [11]. The approaches were similar to other KBSs in Bandung City [17], in which there were supervision activity and door to door check required to ensure its implementation. Once the educator teams found any mistakes in the separation practice, they will give feedback. So, the residents understand their mistakes and know how to do it correctly. Supervision activity is also conducted to examine participation rate. The habituation process form new habits and competence so that the residents will be more trained and easy to do the behaviour in the future [11]. Residents will have the capacity to decide and do a specific behaviour guided by their thinking and heart [22]. Moreover, habituation factors are proven to significantly affect to the waste separation in Indonesia [23] and in other countries such as China [e.g. 2,18]. The whole learning process conducted in KBS Neglasari is shown in Figure 2.

![Figure 2. Character building process in KBS Neglasari](image-url)
The educational activities combining three approaches as shown in Figure 2, prove that character building has been implemented in KBS Neglasari. The learning process targeting to nurture moral knowing, in terms of moral value and moral awareness toward the environment, combined with moral feeling, in terms of conscience and empathy can develop intrinsic motivation for the residents to change their behaviour to be pro to waste management. It means the residents will eventually have a willingness to participate, especially with the support of habituation, which is intended to improve competence and build new habits toward waste management. The development among the three components will eventually build residents’ character to love their environment and willingly participate in waste management. As a result, participation will be sustainable. However, it takes time and iteration process to ensure sustainable changing behaviour.

4. Conclusion
Sub-District Neglasari, Bandung City, is one of the areas in Bandung City that concerns in waste management. The educational teaching conducted several approaches to inform the residents, including DTDE, leader meetings, informal discussion, personal approach, heart-to-heart talk, and habituation. The educational activities focus on sharing environmental knowledge, moral values, real stories about waste problems, and supervising and accompanying activities. To build the character, each approach and educational activities focus on nurturing moral knowing (moral values and moral awareness), moral feeling (conscience and empathy), and forming new habits by practicing waste separation directly. These approaches can be useful if conducted intensively and iteratively until they internalize the knowledge and values being shared. Once the internalization occurs, the behaviour can be sustainable and ensure resident participation toward waste separation. Thus, further study is required to measure the output of the education program implemented.

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