



Circural School: As a Model for Integrating 21st Century Environmental Care Character Education in Elementary Schools

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Abstract. Education is the most important factor and priority for all parties. Character education is an attempt to educate children to behave and participate in good social contributions. Therefore, it is necessary to instill character education from an early age, especially at the elementary school level. This situation shows that it is appropriate to improve the character of caring for the environment of students through circural school. The purpose of this study is to describe the integration of environmental care character education through circural school at SDIT Muhammadiyah Al-Kautsar. This type of research is descriptive qualitative. The subjects of this study were 31 grade VI students in the first semester of the 2022/2023 academic year. Data collection techniques through observation, documentation, and interviews to explore the integration of environmentally caring character education through circural schools. The validity of the data used is the source and technical triangulation technique. The data analysis used is ethnographic research, starting from selecting ethnographic projects, asking questions, collecting data, recording data, analyzing data, and writing reports. The results showed that the integration of environmentally caring character education in students through a circural school approach went well. This activity concluded that character building of elementary school-age children can be done through a circural school approach.

Keywords: Character Education, Environmental Care, *Circural School*.

1 Introduction

Environment and humans have an inseparable relationship. With the establishment of sustainability around humans can improve the quality of life. Therefore, humans must be able to manage and maintain the environment well. However, the current state of affairs is one of a decline in environmental quality (1). Humans cannot just close their eyes to the problems that occur. Because future generations will have the opportunity to live in harmony with the peaceful environment on earth (2). The continuous

human exploitation of the environment and natural resources is the cause of environmental hardship and damage. These include biodiversity loss, ocean acidification, air pollution, water pollution, climate change, land degradation, and pollution in the ocean (3).

Indonesia's social structure has developed as a result of industrialization and globalization so that at this time Indonesia has lost its personality and identity, the Indonesian nation is more pragmatic and materialistic than spiritual and humanist, this is reflected in their social identity. In terms of education, the younger generation is now more inclined to anti-social behavior, violence, and individualism (4,5). This interdependent life, man is the main subject who depends on natural resources for his survival. In relation to that, it makes human beings lose sight of who they are and to meet their own needs. This can lead to degradation or deterioration of environmental quality (6,7).

Scientists focused on deteriorating the planet emphasize the importance of healthy, functioning and resilient ecosystems as essential for all living things, including humans (8,9). In everyday life, we have to decide between various kinds of attitudes that are good or bad for the environment. It is essential to convey an understanding of the importance of environmental protection to raise human ecological awareness. It is hoped that a thorough understanding will be able to influence people's behavior to care more about the environment (6). Public awareness of the importance of caring for the environment is still weak. Littering is still a behavior that many children, teenagers, and even adults do. Protecting and restoring the global environment will require transformative changes in human production and consumption-related behaviors, reflecting individual choices as well as larger-scale, culturally mediated collective action (8–10).

With regard to human indifference to the state of natural resources and the environment, then behavior change is the main goal to overcome the environmental crisis. To preserve the environment, one must pay attention to the specific facts and impact of their actions (11). That's why it's important to teach students about caring for the environment. Education is needed to change human behavior, namely by developing caring character from an early age, in order to combat concern for the environment. The best way to grow and disseminate knowledge about the value of environmental conservation is through education (4). Environmental education has become part of the school curriculum (12). This can be seen from the beautiful and lush layout of the school. However, the idea of protection of the environment has not yet been fully incorporated into everyday life.

Education is the most important factor that requires special attention from all parties, because education will determine the future development of a nation, especially the Indonesian nation. The 2013 skills curriculum places great emphasis on character development, which includes concern for the environment or character education through *adiwiyata* (13). Education should be used to inculcate, understand, and increase knowledge of the value of sustainability, and maintain environmental quality (14). Character is very important to develop one's personality or the personality of a nation, observers propose many solutions, one of which is character education (15).

The term "character" refers to the basic moral values of caring, honesty, fairness, responsibility and respect for others and oneself (Character Education Partnership, 2003 in (16). Character education is a methodical, comprehensive, and well-thought-out strategy for teaching moral principles (17). The Ministry of National Education's Language Center defines character as "innate, heart, soul, personality, ethics, behavior,

personality, and traits". Character is personality, behavior, traits, and disposition (18). Character education is an effort to build character. Character building is the process of character building is the process of forming the soul in such a way, becoming distinctive, attractive, and different from others. Just as the letters of the alphabet are never the same, so can people with character be distinguished from those without character (18).

Character can be seen from honesty, which is honest in speech, open, and consistent with what is said and done. Mature character development requires a continuous process and continuity throughout life. There are many challenges in developing character, one of which is the development of information and technology related to globalization. Many foreign cultures can quickly assimilate and have an impact on attitudes and behaviors. Schools that are only concerned with cognitive values will fail in developing people with character (7,19). Character education in schools is a very important need to equip the next generation with basic skills needed in life (20,21).

Based on the joint regulation of the Minister of Environment and Minister of National Education No. Kep.07/MenLH/06/2005 and No. 05/VI/KB/2005 to promote and improve environmental education. Education plays an important role in nation building. It is hoped that the country can become a decent nation through education. Character education from an early age is very important to be applied, especially in elementary schools which is one of the most important education for children. Students must engage with the environment when they want to develop character because character cannot function in a vacuum but rather plays a role in protecting the environment (4,22). As social creatures, humans must have a positive outlook in interacting with nature and have a responsibility to protect the environment (23).

Elementary school is one of the school levels. Primary school students are usually 6-12 years old. Children aged 7-11 already have some fundamental structural skills that are well integrated, such as the ability to classify things into hierarchically distinct groups. Based on this behavior, it can be concluded that children aged 7-11 years already have a classification system, so it can be interpreted that they can be invited to think, group, categorize, and classify (24,25). According to one study, there is a correlation between behavioral goals related to waste management and an understanding of sustainable waste management. Information-based behavior will always be preferred over non-knowledge-based behavior, experience, and studies show that a person's knowledge or cognitive abilities greatly influence how they choose to behave in the surrounding environment (26)

Circural school itself originated from the circural economy where the activity is related to being able to make formulations to reduce waste populations by converting waste into materials of economic value. A system of resource utilization known as a circural economy involves the direct reduction, reuse, and recycling of resources (27,28). The goal of a circular economy seeks to maximize productivity by minimizing resource consumption as well as negative side effects, as well as reusing waste generated in the process (29). In accordance with this, the school stated that the government's movement to build a greener, waste-free country by optimizing the potential of goods to the point where their economic potential runs out. Through circural economy gives schools a breath of fresh air about techniques in handling waste properly. The circural school program itself consists of waste banks related to waste management in schools, fish ponds, biopores, hanging gardens, tabulampot, and hydroponics.

Preliminary studies that have been conducted by (30) that waste management is a major one that needs to be handled carefully from start to finish. Good waste management should be taught from an early age in children. Environmental education through good waste management is a foundation that needs to be developed in early childhood so that they have an understanding of their environmental awareness. Awareness of the environment will develop an attitude of concern for ecology. Awareness of the environment, especially in terms of waste management, can be started with an understanding of waste (31). In line with research Huda & Rajagukguk (2020) explained that waste management and the use of biopores as examples can help people in developing a more environmentally conscious attitude. If waste management, pollution prevention, and preservation of flora and fauna are carried out regularly, then the character of caring for the environment can be created properly. One of the steps in preserving the ecology of our residence is to carry out waste management and biopore utilization.

From the results of the research outlined above, a positive environment can improve student performance and creativity. School is one of the significant places to implement the implementation of character education for children. Therefore, the objectives of this study are: 1) describe circural schools related to waste management and the greening movement or go green, 2) integrate environmental care character education through circural schools at SDIT Muhammadiyah Al-Kautsar, 3) inhibiting factors and solutions for the implementation of environmentally caring character education through circural school programs. In connection with this background, it is expected to realize character education in students who care about environmental balance.

2 Method

The type of research used is qualitative descriptive research. The approach used in this study is a qualitative approach (33,34). Qualitative research focuses on exposure to events and is "generating theory" not "hypothesis-testing", so that in the preparation of substantive theories based on empirical data in the field (35). Qualitative research requires researchers to be present directly in the field to obtain the right data. Descriptive research is the most basic research. This study only manifests or describes observed events, both natural and artificial. In terms of content, it explains about activities, characteristics, relationships, and similarities and differences with other events (36). The research findings are then explained verbally and linguistically using the scientific method (37).

This research design was used by researchers to obtain complete information about the Integration of Environmental Care Character Education through Circural School at SDIT Muhammadiyah Al-Kautsar. The object of study is the Integration of Environmental Care Character Education through Circural School involving grade VI students. The sampling technique is purposive sampling. Purposive Sampling or deliberate selection that aims to select informants based on criteria that are considered to provide maximum data (38,39). Data was collected through observation, documentation, and interviews (40). This researcher interviewed the teacher, some students, and the chief executive.

For observation activities, researchers observe students and teachers in carrying out activities related to the topic. For documentation researchers take some pictures related

to the program that has been implemented. The data validation used is source and technical triangulation. The data analysis used in this study is ethnographic. Ethnography describes the structure of social organization, social activities, symbolic meanings, material sources, and interpretive processes peculiar to a particular group of people (41). Ethnography studies people in space and time in their daily lives (42). There are six steps in ethnographic research: choosing an ethnographic project, asking questions, collecting data, recording data, analyzing data, and writing reports (43).

3 Results and Discussion

The results of research related to circural school at SDIT Muhammadiyah Al-Kautsar show that this school strives to build a school that cares about environmental balance. Efforts to slow down environmental damage are by raising awareness of the importance of preserving the environment, changing habits that are not good for environmental care, and caring for environmental sustainability (44). SDIT Al-Kautsar is one of the elementary schools located in Gumpang Village, Kartasura District. As is known that the environment and humans both cannot be separated because the two components are interconnected. Related to this, the school chose the circural school approach because this approach was considered more effective than the previous approach in waste management in the school environment. In the previous approach, the school only used how to process plastic waste into a craft made by students only. However, over time the method is considered less effective. Therefore, after participating in counseling activities, the principal had an idea not only to reduce waste using waste banks, but to produce economic value or commonly called the circural economy.

The implementation of integrating the character of caring for the environment associated with circural school is carried out through various programs that have been planned by the school. Students are required to participate in the realization of programs from circural schools in the hope of fostering love and care for the school environment. As future generations who become agents of change, we should instill an attitude of caring for the environment from an early age. In strengthening character education, especially in the field of the environment, it should be given from an early age with the aim that character values embedded in children can be carried out habitually without burden (45–48). Schools can help students, especially those in elementary school, develop caring attitudes towards the environment. Elementary school students generally have a mindset that can be encouraged to recognize and understand the value of preserving the environment (48–51). The following are the programs in circural school: 1) waste bank; 2) fish ponds; and 3) Al-Kautsar garden which includes biopores, hanging gardens, tabulampot, and hydroponics. Of the many circural school programs, only a few programs involve compulsory student participation, including waste banks, hanging plants, tabulampot, and hydroponics as explained by the school.

Based on observations in the school environment, there are two types of waste found, namely organic waste and inorganic waste which can be seen in Table 1. below:

Table 1. Types of Waste in the School Environment.

No	Types of Organic Garbage
1	Leftovers
2	The rest of the drink
3	Tree twigs and leaves
4	Tissue
5	Paper
6	Plastic Bottles
7	Plastic bag
8	Plastic Glasses
9	Food Packaging
10	Beverage Packaging

Based on Table 1, it can be seen that in the SDIT Muhammadiyah Al-Kautsar school environment there are 3 types of organic waste and 7 types of inorganic waste. Based on the table above at SDIT Muhammadiyah Al-Kautsar, some of the waste produced by school residents is inorganic waste. There are 7 kinds of inorganic waste that have been found in the school, including tissues, paper, plastic bottles, plastic bags, plastic cups, food packaging, and beverage packaging. This inorganic waste, if not managed properly, will later become a new problem in the school environment. Currently, the amount of plastic waste in Indonesia is 5.4 tons every year, which accounts for 14% of household waste (52–54). Therefore, the school has provided a trash can as a landfill. Before being disposed of in large barrels or commonly called waste banks and later will be disposed of in landfills. Students will consciously throw garbage in the trash can provided by the school. With the existence of the waste bank, it is expected to overcome problems related to inorganic waste produced by students. This is able to increase students' awareness of healthy living by disposing of garbage according to its type (55). Self-habituation in disposing of garbage in its place and according to its type will not take place properly without the will and awareness of the community (56).

Paper waste produced ranging from test papers to documents that are no longer used will usually be collected into one and then later will be sold to waste sales points. This is related to the circular economy which reduces waste to produce its economic potential. That way, if there is plastic or paper waste at home, it can later be collected in the waste bank at school, so that the waste can produce economic value. The school also socializes that after lunch the place to eat that has been used is immediately washed in the space provided. The student's food waste will later flow into the fish pond on the school grounds, so that the food waste is not scattered. Basically, organic waste can be turned into fertilizer that can help growth. Compost and liquid organic fertilizer are made from garbage waste. Composting will restore soil fertility. Hard soil becomes loose, barren becomes fertile, and acidic soil becomes more neutral (57–59).

In addition, students often use plastic when buying drinks in the school cafeteria during class breaks. Because using plastic products can cause various serious environmental problems (54). Not only is it a problem in the city, but plastic waste is a problem in the ocean. In addition to harming human health and causing the death of many protected species, plastic waste also has a significant detrimental effect on ecosystems. Plastic waste is waste that is difficult to decompose naturally. A clean environment will produce a healthy and comfortable living atmosphere that brings peace especially in the school environment. If the school environment is clean, learning will take place comfortably. Therefore, education about waste sorting and handling is very important, especially for early childhood (60–62).

Related to the table above, the types of waste in SDIT Muhammadiyah are classified into 2 types of waste: organic and inorganic waste. This is in line with research conducted by Ponisari, Syam, & Susena (2019) Regarding waste management and management in the school environment, there are 2 types of waste in the school environment, namely organic and inorganic waste. Waste can be managed by limiting the use of bottles, plastic waste and food waste paper, by incineration, landfill and composting waste. At SMP Muhammadiyah Al-Amin Sorong, management is carried out by reducing waste (Reduce) and recycling (Recycle). Just like the observations that have been made at SDIT Muhammadiyah Al-Kautsar, there are 2 types of waste, namely organic waste that has been found as many as 3 pieces and inorganic waste as many as 7 pieces. By recycling, it is able to train students' creativity, for example by processing waste waste by making pots with used bottle media (64).

The method of waste management in previous schools was also carried out with the 3R principle (reuse, reduce, recycle). However, the process is still not going well because students only understand their knowledge without practicing directly. If this principle continues to be carried out, then garbage will not accumulate in the school environment, which can cause unpleasant odors and interfere with the teaching and learning process. Based on observations and interviews with teachers, chief executives, and students with a total of 31 respondents. So data on waste management carried out at SDIT Muhammadiyah Al-Kautsar can be seen in Table 2. below:

Table 2. Waste Management in Schools.

No	Description	F	% (Yes)	F	% (No)
1	Throwing garbage in place	31	100	0	0
2	Distinguishing organic and inorganic waste	23	74,20	8	25,80
3	Knowing the 3R program (reuse, reduce, recycle)	18	58,07	13	41,93
4	Bring cutlery and drinking utensils from home	22	70,97	9	29,03

Based on the table. 2 It can be seen that all students can already dispose of garbage in its place. This can be seen by the number of percentage gains as much as 100%. So the level of awareness of school residents to dispose of garbage in its place is good. Students no longer litter, for example when rushing into the classroom because the bell has sounded students still throw garbage in the space provided. So that there is no more litter thrown away or left on the canteen table so that the cleanliness of the school is

maintained. Maintaining cleanliness is the same as creating a healthy environment, so it is far from breeding grounds for diseases (65). However, there are still students who are not right in disposing of waste, it can be seen that there are still 8 students who cannot distinguish organic and inorganic waste. Students assume that disposing of garbage according to the type of garbage is considered difficult to practice so that students are sometimes careless in disposing of their garbage. Taking out garbage, cleaning the classroom every day, separating dry and wet garbage, recycling unused items into crafts are examples of maintaining cleanliness in schools (66). Therefore, as a good school citizen must maintain cleanliness because it has many benefits in everyday life (67).

Students can already dispose of garbage in its place, but they do not know the 3R program (reuse, reduce, recycle) because there are 13 students of whom do not understand what the 3R program (reuse, reduce, recycle) implemented by the school. Despite the fact that the school has provided socialization about the 3R (reuse, reduce, recycle) program. However, students still need coaching by teachers or schools so that students know how to apply the correct 3R process (reuse, reduce, recycle). This is because teachers play an important role in the world of education and teachers have the main task of carrying out students (68,69). Teachers need to teach students to use waste as handicrafts or recycle waste into compost (70,71). With waste management, it is very necessary to minimize its adverse impacts around the environment, one of which is through the 3R program (72). Students can already dispose of their place, but there are still those who do not bring eating and drinking utensils from home. It is shown that there are still 9 students who do not bring drinks from their homes and choose to buy them in the cafeteria because they are considered more practical. Another reason students do not bring cutlery from home is because the school has provided lunch along with cutlery.

The results obtained are in line with research conducted by Kristiawan, Maryanti, & Fitria (2019) who has conducted research at SMK Negeri 2 Muara Enim obtained the results that students care about greening the environment and a sense of responsibility to maintain school cleanliness through the waste bank program. The garbage collected is garbage from each department and other garbage around the school. Each student develops an honest attitude and awareness in loving the environment. Further research conducted by Simatupang, Veronika, & Irfandi (2021) at SDN Pondok Cina Depok obtained the result that the entire community must play an active role in overcoming waste. One way is to get used to sorting waste and practicing the 3R program (reuse, reduce, recycle). The practice of sorting waste can be improved by separating container motifs based on the type of waste. Reuse is reusing an item without processing it. Reduce is a reduction related to everyday life. Recycle is recycling or the process of turning waste into new, more useful products (72). This habit must be instilled early on in elementary school students. So that it can help introduce waste sorting methods from an early age and disseminate waste sorting methods to the community through elementary school children as agents of change.

The integration of environmental care education has been carried out in every subject in the school. When talking about circural school subjects it is more applied to Science subjects. Because in this subject students will be closer to nature and learn to use media

from nature. Which in these subjects is very sustainable with this circural school approach. In class VI, *circural school* is integrated with Plant Breeding material in Natural Science material. Where students are asked to plant plants in the form of onions such as onions. Based on the results of observations and interviews with teachers and students as many as 22 people, data on integrating character education caring for the environment with Science subjects can be seen in Table 3. below:

Table 3. Integrating Environmental Care Character with Science Learning.

No	Description	F	% (Yes)	F	% (No)
1	Maintain cleanliness in the classroom	30	96,78	1	3,22
2	Growing plants as a learning medium	31	100	0	0
3	Care for plants	25	80,65	6	19,35
4	Watering plants	22	70,97	9	29,03
5	Checking your own plants are alive/dead	26	83,88	5	16,12

Based on Table 3, it can be seen that all students have maintained cleanliness in class, but there are still 3.22% of students who have not maintained cleanliness in class. Because there are still students who are indifferent when they see garbage nearby. Students can already use nature as a learning medium in their classrooms. In primary schools, the idea of environmental education is seen as an integrated learning concept, meaning that it is taught according to the abilities of certain subjects (75). All students can plant plants in the school yard as a learning medium, but for practice students still cannot do it, for example watering plants because there are still 3 students and those who have not been able to take care of plants as many as 6 students. This happens because students only understand the theory for practice, they are still difficult to apply in terms of caring for and watering plants. The role of teachers is needed because they must understand the purpose of each subject to integrate environmental education without deviating from the material to be taught as the expression children see children do (76). For example, such as garbage, floods, air pollution, global warming, forest destruction, and abrasion are examples of environmental problems that often occur (77). Environment-based character is an example of humans who have good character not littering, as well as character education based on self-potential, examples as prospective educators (teachers) have qualities as professional teachers (78).

Students can plant plants, but students cannot distinguish between plants that they have planted are alive or dead. This shows that as many as 5 students can only plant without paying attention to their respective crops that have been planted on the school grounds. This, of course, will cause new problems for teachers. By integrating character education with the academic curriculum contained in science learning, it can help students to achieve success (79,80). In building environmental awareness, a result is obtained in the form of concern for plants which is one of the indicators of building environmentally caring character that must be taught to students from an early age. This is done so that students have awareness and a sense of belonging to the surrounding plants. Discipline problems are needed in learners because students often commit disciplinary violations in schools (81). A sense of belonging is very necessary because students will

then have a disciplined character in maintaining and caring for them. As a result, there will be no more destruction of nature in the future (82).

In internalizing the value of caring for the environment to students through a direct learning process, the teacher directly conducts practice and provides explanations related to the attitude that must be carried out towards the environment. In addition, the teacher also writes down the expected character values in the lesson implementation plan, one of which is the character of caring for the environment (83). In line with research conducted by Narut & Nardi (2019) at SD Kota Ruteng on Environmental Care Attitudes in Grade VI Students found that this traditional approach did not give them the opportunity to cultivate their attitudes, such as environmental management. If students are taught responsibility for the environment through effective teaching techniques, then they are able to internalize it. The purpose of environmental education is to inspire students to care for nature and the surrounding environment (84). Fostering an attitude of caring for the environment can be done by inviting children to dispose of garbage according to its type, caring for plants, maintaining the cleanliness of classrooms and buildings, and other activities (85).

The discussion above is also related to the school culture at SDIT Muhammadiyah Al-Kautsar. This school culture is related in the context of teacher habituation to provide examples so that students are able to develop character and habits of caring for the environment. School culture must be instilled from an early age so that it is inherent in students. An environmentally friendly school culture is implemented through four components. The four components are making ecologically responsible policies, implementing environment-based curricula, integrating communities in environmental activities, and managing environmental resources (86). The ecological concept of the 21st century aims to reduce existing environmental damage so that the condition of the carrying capacity and resilience of the environment will improve (87). School culture has been carried out optimally starting from removing garbage, watering plants, and community service. In carrying out these habits, students carry them out consciously and of their own accord without any coercion from teachers or the school. However, there are still students who are indifferent to the cleanliness around them. Thus, character education cares for the environment has an important role to foster school culture (88,89).

In the application of integrating character education to care for the environment through circural schools, there must be supporting and inhibiting factors. Supporting factors are everything that facilitates the implementation of activities or programs. While inhibiting factors are everything that becomes an obstacle in the process of implementing an activity or program (90). So that the process of forming an environmentally friendly school culture can run smoothly. Therefore, the supporting components include adequate infrastructure and human resources, as well as assistance from several parties that can raise the enthusiasm of school residents (91). Meanwhile, the obstacles faced come from students and an environment that is not conducive, monitoring and evaluation that is still lacking, and the inability of educators and inappropriate time. The task of teachers is increased because this addition makes educators overwhelmed in managing students, as well as the lack of sensitivity of school residents to the surrounding environment. Teachers must be able to create active teaching tactics and techniques and involve students in learning related to the environment (70).

Monitoring the evaluation of the achievement of the implementation of integrating environmental care character education through circural schools will be carried out by the chief executive by monitoring every week. To monitor the success of management, the school will document the state of the environment in the school in the form of notes and photos. Documentation will continue to be carried out to monitor the progress of biodiversity conservation in schools and integrate character education to care for the environment through circural schools. Monitoring evaluation will continue to be carried out to minimize the obstacles faced by school residents in the process of integrating environmentally caring character education through circural schools. For the school, the implementation of character education for students is very important because it is not just to fulfill the obligations and responsibilities of carrying out the mandated academic curriculum. However, to balance students' knowledge by instilling character values. One of the efforts to shape children's character values holistically, namely by developing them optimally in terms of physical, emotional, social, artistic, creativity, and intellectual children (92). Students are expected to be able to utilize their knowledge for good by having certain character values (93,94).

In connection with the results of the research above, schools are one of the many strategies that are quite effective to advance and succeed the nation's character education agenda, one of which is character education caring for the environment. Research results Saputro & S. (2015); Thambusamy & Elier (2013) suggests that character education in schools needs to be carried out as effectively as possible and supported by schools through assistance from various activities. With the existence of character education, it is expected to be able to overcome the character crisis that arises in the global community and can best develop the abilities and mindsets and behaviors of students based on their roles in religious, social, and state life Character consists of policies that function as rules for behavior (97,98).

4 Conclusion

Based on the explanation above, it can be concluded that environmental care character education through circural school is an approach that is oriented towards integrating character education more deeply in teaching environmental care character values to students. The circural school approach is considered effective in integrating character education to care for the environment and also in its application has gone well. However, this approach still needs to be further developed and always carry out further monitoring and evaluation so that it really produces students who have an environmentally caring character.

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