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## EDITED BY

Monika Akbar,  
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Hari Purwadi,  
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Agaptus Nwozor,  
Bowen University, Nigeria

## \*CORRESPONDENCE

Sumarjiyanto B. M. Nugroho  
nugrohosbm@lecturer.undip.ac.id;  
nugroho.sbm@gmail.com

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# The role of mothers in anti-corruption education: The development of "BUTIKO" as knowledge-sharing virtual community

Sumarjiyanto B. M. Nugroho<sup>1\*</sup>, Indah Susilowati<sup>1</sup>,  
Olivia Fachrunnisa<sup>2</sup>, Made Ika Prastyadewi<sup>3</sup> and  
Aini Nur Furoida<sup>1</sup>

<sup>1</sup>Faculty of Economic and Business, Diponegoro University, Semarang, Indonesia, <sup>2</sup>Department of Management, Faculty of Economics, Universitas Islam Sultan Agung (UNISSULA), Semarang, Indonesia, <sup>3</sup>Faculty of Economics and Business, Mahasaraswati University, Denpasar, Indonesia

This article contends that if anti-corruption campaigns are to be effective, mothers must be involved in anti-corruption education, especially for children. The process of character-building will require early inculcation of anti-corruption ideals to prevent the manifestation of corrupt behavior in the future. However, lack of access to educational materials, especially in rural areas, makes the role of mothers in educating their children about corruption difficult. In order to overcome this impediment, this article advances a novel solution based on the use of information technology by mothers to offer anti-corruption education to their children in rural areas. The purpose of this article is to discuss the proposed framework of Bunda Anti Korupsi "Butiko" (BUTIKO) virtual community. The virtual community helps mothers (Bunda) and children to access character education and anti-corruption knowledge from experts. It is expected that the creation of the virtual community character education will help prevent future corruption.

## KEYWORDS

virtual community, marginal area, anti-corruption, education, early children

## Introduction

Developing countries tend to be more tolerant of corruption than advanced countries. This is shown in recent research related to foreign direct investment (FDI) on the role of financial development in 80 countries between 2003 and 2019 (Krifa-Schneider et al., 2022). Meanwhile, studies on the level of corruption in ASEAN

5 (Indonesia, Malaysia, Thailand, Vietnam, and the Philippines) between 1997 and 2019 showed that although there is a gradual decline, there is still significant level of corruption (Susilowati et al., 2021). In the existing literature, it is widely argued that corruption correlates with poverty (Gupta et al., 1998; Azwar and Saragih, 2018; Hoinaru et al., 2020). It will have an influence on economic activity, since corruption will weaken investors' trust in investing in equities, resulting in a decrease in the investment economy. Market disruptions that result in an inability of products supply to fulfill market demand may lead to inflation. In this situation, corruption stifles competition, raises the cost of conducting business, fosters disinformation in the corporate sector, and exacerbates wealth disparity.

The "governance model" highlights how corruption impacts poverty through institutions, such as governments' inability to deliver quality public services and bribes on public investment projects (Chetwynd et al., 2003). According to Capasso and Santoro (2018), there are two forms of corruption, namely, active and passive corruption. Firstly, active corruption occurs when the government uses its authority to perform an act of corruption; second, passive corruption occurs when the private sector uses its negotiating power to determine the quantity of bribes. According to Sabic-El-Rayess and Mansur (2016), non-monetary corruption might take the shape of job exchanges, help, and promises made by elite individuals.

According to Duerrenberger and Warning (2018), education can help minimize corruption.

Education, in and of itself, can help to create human capital via the accumulation of experiences. Compulsory education for each individual, starting from elementary to tertiary level, can help to create human capital as well serve as a mechanism to instill values that are antithetical to corruption in the young people. Children are believed to be an asset for a country that will become the country's leader in the future. Their attitudes and behaviors are closely related to parenting and the way parents educate their children, especially mother.

Several studies related to prevention to fight corruption have been conducted. The result of the study show that women who have a role in political institutions are considered more honest and have a tendency not to be involved in corruption (Barnes and Beaulieu, 2019). Likewise, the involvement of women in regional councils, shows that the higher involvement of women in regional councils, the lower the level of corruption. Through the power obtained from involvement in political institutions, women tend to maximize the improvement of public services in areas that are beneficial to women, especially education and health programs (Bauhr et al., 2019). Both studies (Barnes and Beaulieu, 2019; Bauhr et al., 2019) still require more specific research in relation to how to design a work pattern for women's representation to prevent or fight corruption, for example through education related compliance and honesty. Furthermore, Dirienzo and Das (2019), examine the increase in women's involvement in political power is related to a decrease

in the level of corruption, so that environmental performance also increases. The results show that those women who are involved in political power, have access to higher knowledge related to corruption experience, tend to avoid involvement in attitudes and behavior related to corruption. Meanwhile Matukhno (2016) states that women have a stronger potential to prevent corruption, but also have the potential to remain passive in relation to acts of corruption (for example: not reporting bribery), without the availability of empowerment infrastructure that involves them collectively (Lin and Yang, 2019) in community. From some of these studies, it can be said that research on the role of women to prevent corruption is still on its early stages. Some of the research that has been conducted has not yet focused on how to regulate the workings of women's engagement in a community to improve anti-corruption education and its implementation. However, it is proven that women have a strong potential to prevent or fight corrupt behavior.

Moreover, Silalahi (2018) states more specifically the role of women as mother in a family to prevent corruption. Ease of access to information as a positive influence on the availability of technology from IR 4.0, without the ability to manage information into useful knowledge, also has the potential to have a negative effect on women. These negative impact are, for example, influenced by the social environment (socialite environment), a consumptive lifestyle that is not balanced with income, which can be the main factor that causes corruption for themselves, their families and the surrounding community. Therefore, women as mother in a family have the responsibility of being the primary care giver, as well as being the first educators (Onuma and Berhane, 2021) for children and the whole family, are obliged to educate to understand norms, values, ethics to form an anticorruption character. In connection with an effort to engage women to prevent corruption, the Women's Empowerment to Fight Corruption (SPAK) the program has shown success, although it has not yet led to the involvement of rural mothers and young children (marginalized areas). Over 1,700 women have received anti-corruption training from KPK. In order to track public satisfaction with the Yogyakarta police force, female SPAK agents have also been formed as police personnel (United Nations Office on Drugs and Crime [UNODC], 2020). The proportion of SPAK agents from the program consists of women organizational members, civil servants, educators, local leaders, religious leaders, law enforcement personnel, and CSO members.

According to the knowledge of the authors, most of the research on preventing corruption that has been done has not yet led to how the framework is built to provide space for mothers and children to learn together about anti-corruption education. In addition, some of these studies also have not thought about empowering women or mothers from marginal families. Meanwhile, recent studies show that the

active participation of women in the use of the internet for advocacy will reduce the level of corruption (Susilowati et al., 2021). However, because it is not immediately tied to the meeting of family needs, it might be challenging to encourage rural women or mothers (marginalized areas), especially those who are largely living in poverty, to participate in internet-based advocacy (Rupok and Chowdhury, 2018). It is, therefore, imperative to create awareness about online education and online community through the internet and IR 4.0, and how they could yield direct benefits to the daily lives of marginalized families.

This study contends that a virtual community is a veritable mechanism to expand knowledge. In light of the importance of anti-corruption education for youngsters, a virtual community could serve as a knowledge-sharing platform. This article proposes a novel virtual community where a panel of experts interfaces with community members/participants to offer anti-corruption education to children. Essentially, the panel of experts provides interactive education materials for mothers and young children to deepen their knowledge of corruption. This article conceptualizes a framework for virtual communities, dubbed the “Butiko Community.” The framework provides mothers the opportunity to participate in the virtual community as well as contribute to offering anti-corruption education to their children. This proposed framework is expected to create and sustain the awareness and interest of rural women, involve them in online education of their children with a focus on character education and anticorruption, and serve as an attractive platform for mothers and children to learn together about anti-corruption.

## Literature review

Several methods have been tried in an attempt to prevent corruption through anti-corruption education. Some of these methods include character education in preventing corruption and the development of e-learning education to prevent corruption in higher education. In addition, anti-corruption education has also been made available to state officials through community education in order to prevent corruption. Corruption prevention in higher education can be pursued through character education (Kadir, 2018). The cultivation of character education gives students the ability to make decisions between good and bad, to maintain goodness, and to realize the goodness in life with sincerity to prevent corruption. Palandi et al. (2017) developed a Learning Management System to prevent corruption in an e-learning anti-corruption education. This anti-corruption e-learning application is intended to provide anti-corruption services to people and students. More broadly, research by Seregig et al. (2018) suggest that legal community education can prevent corruption among state officials. The results showed that the provision of knowledge

about the prevention of corrupt behavior of the state officials from the legal community education program was more likely to not be involved in corruption than those who had not participated in the program. The three anti-corruption education programs have contributed quite well to efforts in preventing corruption. However, character education, the use of information technology IR 4.0 (e-learning anti-corruption), and efforts to implement anti-corruption education through community education have not been able to have a positive impact on the wider community. This happens because it is still limited to only focusing on higher education, teachers, learners, legal officials, and state officials. Redo (2016) emphasizes the importance of involving women and children in character education, to achieve success in preventing corruption.

Moreover, Suyadi et al. (2020) have examined the integration of character education into religious learning in several Kindergarten female teachers. The results of their research show that most of the female teachers have the perception that Islamic religious education educates anti-corruption characters, such as honesty and simplicity, relevant to the SPAK program (*I am a woman and I am anti-corruption*) (Asia-Pacific Economic Cooperation, 2020). More comprehensively regarding education to prevent corruption (Thoomaszen and Tameon, 2018) explain the importance of parental participation in character growth education, and anti-corruption that is associated with Protestant religious values. The results showed that IR 4.0 (electronic media, mass media, and social media) has a positive impact on facilitating access to knowledge related to corruption prevention. The research finding also suggests that the success of character education for children to prevent corruption requires collaboration involving several parties, such as government, academic, legal, and religious leaders in an online community. Furthermore, research on the inculcation of character education to prevent corruption starting in early childhood has proven to be able to form values of honesty, responsibility, etc., to fight corruption (Drajat et al., 2020).

Various forms of utilization of IR 4.0 for the application of anti-corruption education have been attempted although specifically and systematically integrating anti-corruption experts with mothers and children in the online community is still very limited. An interesting example is the use of digital platforms in the form of virtual training for company owners and employees to prevent corruption provided by Explodo E-Learning (E-SEC GMBH, 2021). The virtual course on corruption prevention provides participants with access to knowledge transfer that the basic source of obeying laws/regulations is the level of moral and ethical standards that produces a strong individual character to prevent corruption. Every individual has the potential to violate the law or regulation due to a lack of awareness or lack of knowledge about it. Through interactive online courses, employees and company owners gain access to knowledge related to raising awareness to prevent corruption. The virtual course material provides

an understanding of compliance, how to prevent violations, corruption definition, how to prevent corruption, guides to fight corruption, what are benefits? what are prohibited? and exceptions, additional remarks, and officials.

Another example is the United Nations through ([United Nations Office on Drugs and Crime \[UNDOC\], 2021](#)) which also provides a module-based e-learning platform designed by experts in the Corruption and Economic Crime Branch. This online course is available free of charge to the public, especially for legal officials and other professionals. This anti-corruption online course allows participants to deepen and update their knowledge in the international community, related to how to fight and prevent corruption according to standards of United Nation norms. The e-learning module consists of information about anti-corruption and advanced anti-corruption; how to prevent corruption, accompanied by a small pre- and post-exam on each module to obtain a certificate. Transparency International UK and New Zealand have also developed anti-corruption training ([SFO, 2020](#)). The training is designed by experts in their fields to provide training for members of the organization, in the form of online learning to share knowledge and experience related to the definition of corruption and the importance of prevention; how to prevent bribery and corruption; law and consequences; methods of reporting cases of bribery and corruption. Likewise [Ethicontrol \(2020\)](#) mentions some free online education to prevent corruption, for example (training on transparency by Transparency International; UN against corruption; and “what is corruption?” by the University of Pennsylvania), providing access to knowledge to prevent corruption. Albeit its focus on the point of view of companies, public, legal, and professional officials, online education shows the importance of implementing basic compliance that shapes the integrity of individual characters. It has not led to how to foster an interest in mothers and young children in dealing with obligations related to character education to prevent corruption in schools. Therefore, an attractive educational community design is needed, and it can also facilitate the availability of space and time to educate young children related anti-corruption.

Furthermore, online education to prevent corruption, which focuses more on character-building for children and parents, has been pursued. Research by [Amfi et al. \(2019\)](#) proposes a framework for using android applications for e-learning to prevent corruption. This online education application provides a conducive atmosphere in the community for access to knowledge and the application of integrity values (honesty, caring, discipline, responsibility, simplicity, courage, and fairness). The results suggest that the application of online education requires the involvement of teachers and parents (especially mothers) who act as mentors. Based on several previous studies and various forms of character education to prevent corruption that has existed, it can be concluded that there is a need for e-learning that systematically involves teachers, legal officials, religious leaders as experts, and mothers

and children as students or participants integrated into an online community.

## Virtual community

The availability of technology as an impact of IR 4.0 if managed wisely can be used as a learning tool in efforts to prevent corruption. For example, the role of ICT, social media, online platforms, and the formation of virtual communities as a means to facilitate access to information, and sharing knowledge related to anti-corruption education. The results of the study ([Serrat, 2017](#)) stated that Information and Communication Technology (ICT) is a useful knowledge-sharing tool to promote transparency and accountability in to fight against corruption. The use of ICT plays a role as a tool to foster a conducive online community with access to information and knowledge sharing, for example in the form of online-right-to-information requests, online services, and transparency and open data portals. ICT's impact on anti-corruption also contributes to information providers facilitating knowledge sharing and social capital growth by increasing e-participation in mutual involvement in virtual communities ([Shim and Eom, 2009](#)).

The result of the knowledge-sharing community, for example, provides information related to government policy-making and service-delivery processes in a transparent manner aimed at the public. A study by [Starke and Naab \(2016\)](#) shows the impact of the online community on the availability of internet access, media freedom, and government online services, which have an effect on reducing the level of corruption. Internet access, media freedom, and Governmental Online Service encourage increased knowledge sharing for the public in the community regarding compliance and monitoring to fight against corruption. Several previous studies have shown that the use of ICT, the internet, and social media can be a tool to empower participants to engage with each other and build collaboration in the form of virtual communities. Through this virtual community, users/ participants interact with each other and share information, knowledge, and experience to achieve a common goal of anti-corruption. However, to the best of our knowledge, there is no virtual community design for anti-corruption education aimed at marginalized families, especially mothers.

Meanwhile, although there are many research discussions on the benefits of the virtual community, it is still very limited in addressing ways or methodologies by which to sustain their virtual communities. Focusing on the formation of virtual communities to foster integrity through character education to prevent corrupt behavior, it is necessary to consider how to maintain sustainability by building trusting behavior for members. Regarding the formation of character education in e-learning communities to prevent corruption, research on trustworthy behavior-based mechanisms to maintain the

sustainability of the virtual business has been carried out (Fachrunnisa, 2016).

The methodology that has been proposed is to protect the community from anyone within it who demonstrates non-compliant behavior. The sign of non-compliant behavior can be identified by examining the performance of agents in a certain number of interactions. This methodology provides a mechanism for monitoring community members behavior when carrying out interaction with other agents, for example by keeping track of members' performance in terms of trusting behavior. Through continuous performance monitoring, the performance monitoring report can show the agent's pattern and determine whether an agent is trustworthy or not.

Many attempts have been made to use the internet to build virtual communities. However, it is still very rare that people pay attention to how to maintain their survival, continue to engage with each other, and to exchange and share knowledge so that the community can continue to grow in a better direction.

Furthermore, regarding the development of the sustainability of virtual communities, Fachrunnisa and Hussain (2020) has developed methods based on dynamic factors to maintain community sustainability. The proposed methodology focuses on creating sustainable virtual communities which depend on the community's response to the dynamic factors in its environment such as the number of members, shared contents and interaction rules. This methodology introduces the use of iterative negotiation and a panel of expert agent to assess the quality of service (QoS) delivered. This QoS assessment is based on an interaction agreement between the community members and the expert agent as the administrator's representative.

## Proposed framework

In this section, we explain the detailed framework of the "Butiko" virtual community and the detail of the parties involved. Members of the community are as follows:

### Women agent

The objective of this virtual community is to educate people, especially women. According to the notion of triple roles, women play a part in teaching children, indirectly molding their character, and also playing an economic role. Women who are married and have children are referred to as moms (mothers) in this context. When it comes to children's education, mothers' roles are more dominating than fathers'. Mothers will teach morals to their children through their attention and behavioral examples. Mothers are accountable for their children's personality development, therefore, they must pay heed to and oversee their children's conduct through

establishing and teaching ethical values, as well as the way in which a mother punishes her children. The mother is an example, which must be taken into account because the kid will imitate her.

Individual character formation necessitates structural planning by the parents beginning in the womb and continuing through the patterns of parenting. There are four forms of patterns: (1) authoritarian parenting, child care characterized by an unwritten rule that all decisions on different topics are held by parents and that the kid is obligated to follow and is not permitted to dispute or question; (2) democratic parenting, care for children by permitting and even encouraging children to debate, holding dialogues to find out what the child's wants are, which are then modified to the parents' wishes; (3) parental neglect, take care of the children for not being engaged in all of their decisions, but the kid is also left without filling spiritual requirements such as care and/or enough physical needs; (4) permissive parenting, care for children is done by exemplifying openly about anything so that children may mimic the attitudes or behaviors of older people as a positive example, offering tensions to children and becoming used to children, where management of children is restricted.

Mothers or women will become the subjects who receive information and serve as passive to attain character education content (corruption prevention education). At the higher level, moms will create small groups to give a forum for conversation or to discuss the material supplied by the panel experts.

### Expert' panel (panel of experts)

In this situation, the Panel Experts include people who are experts in social and ethical subjects. Learning about children's education will be provided by a panel of experts to the Women's agent. The expert panel serves as a catalyst for debates on the concept of corruption, corruption avoidance, and children's education. The platform which will be created by this virtual community will be based on e-learning. In this instance, the expert panel acts as a teacher, provides material, and initiates discussion regarding the topic given.

The proper definition of learning is the experience and interactions with the environment. Learning is utilized by someone to improve a person's overall view by obtaining information or knowledge (Ramlah, 2016). Knowledge must be constructed to facilitate understanding. Constructivism aims to build knowledge and understanding by conditioning learners. An incorrect understanding of knowledge will limit the reconstruction of the knowledge itself. Learning is about mental, not a passive acceptance of teaching (Gunawan, 2012).

Learners' comprehension may differ from what has been taught since each learner actively sorts, filters, interprets, and tests the accuracy of the information he gets (Yadzi, 2012). Giving knowledge can be done with learning strategies

by giving material, exchanging opinions, understanding material through books, giving assignments, presenting results of assignments, and evaluating errors in assignments. Implementation of learning is related to 3 communications, namely (1) communication between instructors and recipients of material, (2) communication between recipients of material with learning resources, and (3) communication between recipients of material (Waryanto, 2006).

## Administrator

This virtual community needs the services of the e-learning administrator. This agent is tasked with establishing the ground rules for the discussion, assessment, reward, and sanction. The administrator must pay attention to e-learning events, as she/he must notice every action of women agents and panel expert agents to determine how far the class has progressed in accordance with the timetable.

Administrator roles:

- Determine the rule of the game.
- Connect the mother and panel expert.
- Coordinate with the expert panel regarding the given e-learning material.

Detail of how the platform works is visualized in [Figure 1](#).

## Methodology of the framework

[Figure 2](#) explains how the user this platform along with the detailed steps.

The user journey consists of 2 phases:

### Phase 1

Phase 1 consists of 2 stages. The first stage of the problem and the second stage is looking for a solution. Each stage has sub-stages. Stages a problem consists of 2 sub-stages, namely, observation and implementation. Sub-stages consist of several activities. Activities in the observe sub-stage are worried about the child's attitude, while the activities in the implementation sub-stage consist of complaining about a rebellious child and being tough on the child. Then from the three activities, the next activity is a lot to advise the child. Furthermore, activities generate feelings and thoughts.

Feeling and thinking:

- How do I advise a child?
- How to teach good attitudes to children?—Worry about the kid's future.

After the first stage (problem), the second stage is looking for a solution. In the first phase, the second stage consists of two sub-stages, namely looking for information and looking for help. After the user looks for information, the activity will continue to look for people with similar problems and have more conversations with children, than with family, friends, neighbors, workplace, and community. In the looking for help sub-stages, the user activity is to ask older people for advice and then proceed to the conversation.

Feeling and thinking arise from some of these activities:

- Whom to ask?
- Get a lot of confusing advice.
- Have different problems.

The last stage of phase 1 is learning. In stage learning, there are two sub-stages: looking for information and looking for help. After that, it continues the user activity to look for information, consisting of watching videos and reading articles from the internet and trying to do the suggestions before. Meanwhile, in the looking for help sub-sates, user activity is asking older people for advice, so that a consultation process/cycle is built.

### Phase 2

Phase 2 consists of three stages. The first stage is the assessment; the second is the result, and the last is the post-implementation stage. Assessment, result, and post-implementation stages are made up of sub-stages. At this stage, there are sub-stages of trial and error practice, resulting in giving an example for children's activities. Furthermore, from the activities produced in phase 1 (learning) and phase 2 (assessment), a consultation process will be formed.

The feelings and thoughts generated from phase 1, in the learning stage and in the 2-stage assessment, include:

Feeling and thinking:

- Why should I trust the information from this website?
- Frustrated.
- Often argue with others about how to educate children.

The second stage is the result. The sub-stage in this second stage is that parents understand how to parent and shape the character of their children. Activity in the result stage is formed with an unchanged attitude. Furthermore, the last stage is post-implementation, with a sub-stage in the form of the child's attitude improving after too much time and effort. Activities from the sub-stage include: asking older people again for advice; giving up and letting the child develop on their own.

Phase 2, on the result and post-implementation stage, generates feelings and thoughts:

Feeling and thinking:

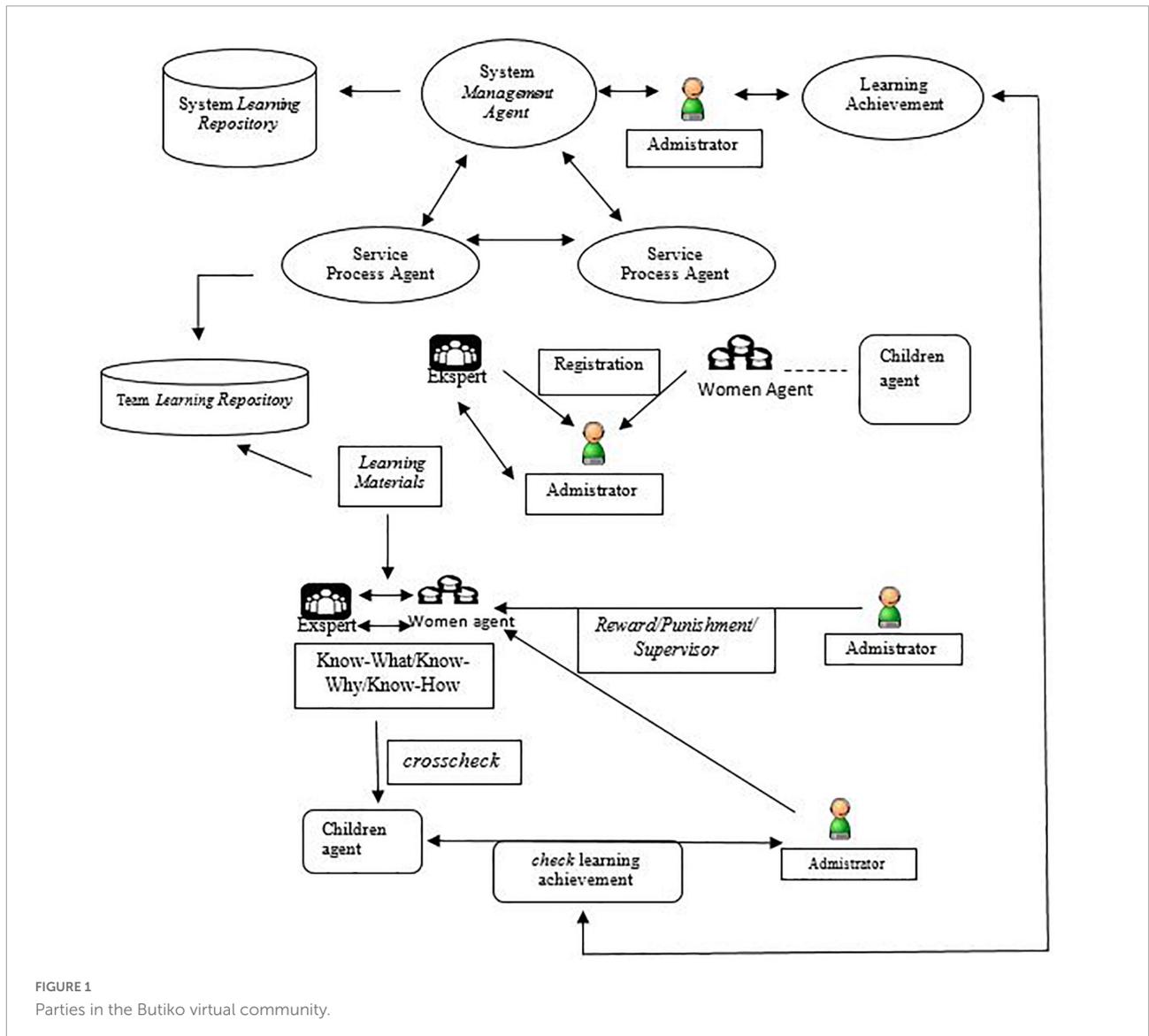


FIGURE 1 Parties in the Butiko virtual community.

- Not able to communicate well.
- Children find it hard to understand if I explain it.

- Contribution of parents and children in attitude learning activities.
- Relationships and a supportive environment with the community.
- Tools to practice understanding and material.
- Reward for gamification.

### Potential opportunities for improvement

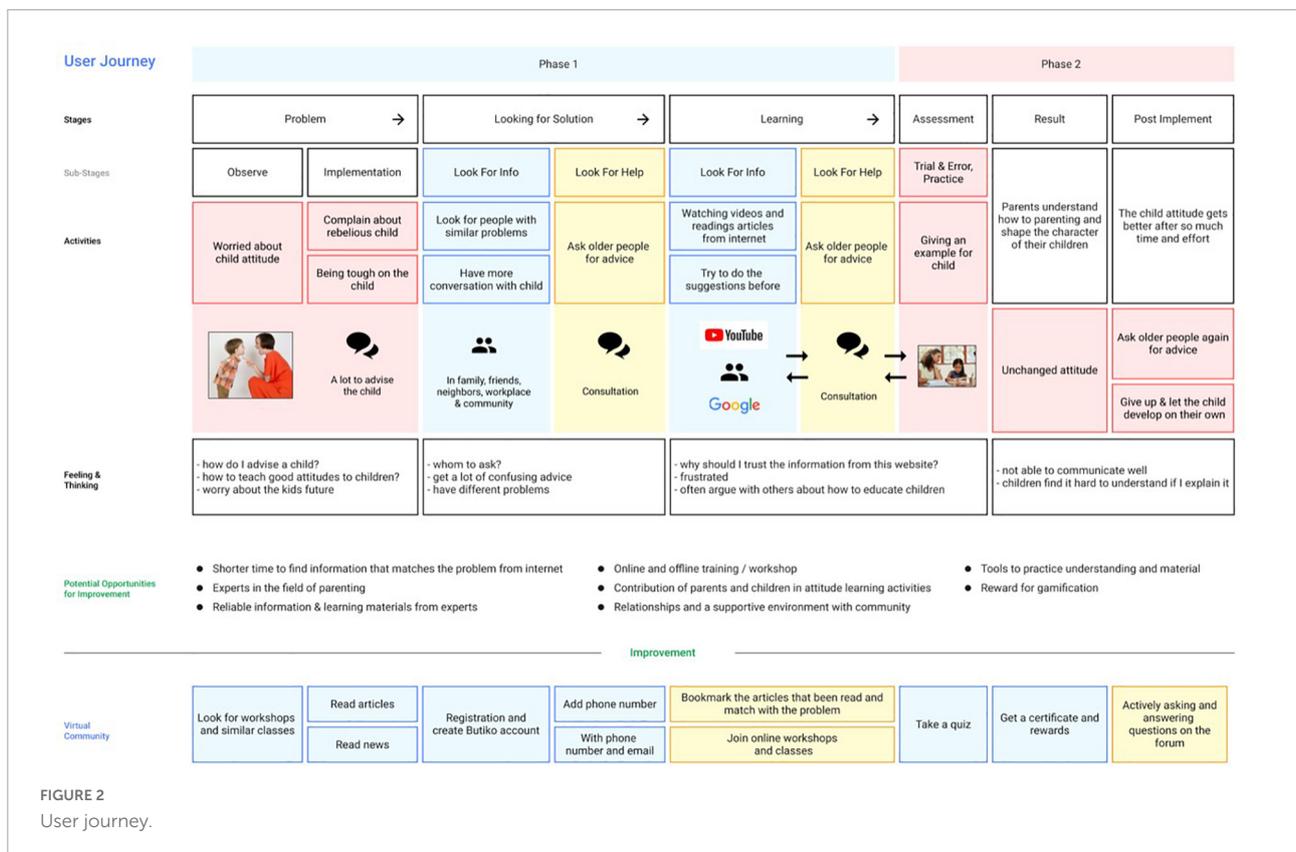
The feeling and thinking generated from phases 1 and 2 provide potential opportunities for improvement, including:

- Shorter time to find information that matches the problem from the internet.
- Experts in the field of parenting.
- Reliable information and learning materials from experts.
- Online and offline training/workshop.

### Improvement

These potential opportunities for improvement will result in an improvement process in the form of a virtual community, such as:

- (1) Look for workshops and similar classes.
- (2) Read articles.



- (3) Read news.
- (4) Registration and create a “Butiko” account.
- (5) Add phone number.
- (6) With a phone number and email.
- (7) Bookmark the articles that have been read and match them with the problem.
- (8) Join online workshops and classes.
- (9) Take a Quiz.
- (10) Get a certificate and rewards.
- (11) Actively asking and answering questions on the forum.

One of the challenges that individuals living in rural regions confront is educating their children to have a positive attitude. They frequently ask those who are older than them to educate children, even though older people do not always have greater talents than younger ones. Furthermore, parents in rural regions used to teach their children by comparing them to other children they thought were superior. If their children continue to be a bother even after being instructed numerous times, parents will typically let them behave on their own.

Therefore, a virtual community called “Butiko” is required to give articles or news including instructional guidelines on how to educate children so that they can have a positive attitude. Articles will be authored by professionals in their respective disciplines. There are workshops that mothers may attend and facilitate the availability of the space and

time to educate their children about anti-corruption. If parents are unsure about a situation or have inquiries, the Butiko Website has a forum function Experts will start the topic of discussion in the forum area and allow moms to ask questions. In addition, the Butiko Website educating moms (mothers) also reaches out to children. The site also includes a Kid’s Corner with learning materials appropriate for children, such as short stories, illustrated stories, pictures, and posters for children with moral, ethical, and anti-corruption teaching principles.

Butiko Website has a task and evaluation function that can evaluate the degree of comprehension of moms and their children in order to determine their knowledge level. After completing the evaluation, moms (mothers) and children who perform well in the assessment will be rewarded based on their performance.

The incentives can take the shape of cooking equipment, a child’s learning equipment, and so on. This method is selected since the aim of this research is in the rural area, where the majority of people are not yet technologically educated. The initial stage will be more focused on the implementation of virtual communities for partner search (Expert and Agent). There are numerous methods for finding a partner:

- (1) Collaboration with students’ internship.

- (2) Conducting workshops or outreach programs in virtual communities.
- (3) Partnership with local governments.

After the parents are gathered, it is necessary to immediately provide learning materials, such as Articles, News, and Workshops. The workshops can also be divided into classes (offline seminars), webinars, and podcasts filled by experts who are proficient in their fields. After gathering the partners, it is critical in delivering learning resources such as articles, news, and workshops as soon as possible. The workshops can also be separated into courses (offline seminars), webinars, and podcasts delivered by subject matter experts.

The website is utilized as a learning medium for agents, including articles written by specialists (experts). The above graphic depicts how information flows in the initial phase of the virtual community system.

After creating a syllabus to use as a guide for creating learning materials, the expert may create learning materials for the website in the form of articles, news, seminars, webinars, and podcasts.

The diagram above ([Figure 3](#)) explains how data is stored in the virtual community website system database. In phase 1, the data that will be managed is limited to learning materials in the form of articles, news, workshops, webinars, and podcasts accessible by agents. Phase 1 intended to create a virtual community foundation as a place of learning both for experts and participants. Besides, this phase is also used as an introduction to participants who mostly are not familiar with digital technology. The website is utilized as a learning medium for agents, including articles written by specialists (experts). The above graphic depicts how information flows in the initial phase of the virtual community system. After creating a syllabus to use as a guide for creating learning materials, the expert may create learning materials for the website in the form of articles, news, seminars, webinars, and podcasts.

## Flow chart of user journey

[Figure 3](#) illustrates the flow chart of the user journey.

### Open website

The user opens the website and prepares an email or phone number. If the user is a new user, then they must register and then login. If the user's data already exists, the user can directly login. After logging in, go to the admin or expert menu.

### Admin

If the user is an admin, go to the admin dashboard to create an event, then save the event and specify a publish event.

In the dashboard menu, there are several activities, consisting of creating events, creating news, and reviewing

articles. On the create event menu, the admin creates events, saves events, and determines the publish event eligibility for the event to be published, and then publishes the event. After the activity is complete, the admin can end the activity on the close website. In addition, in the dashboard, the admin also creates news, saves news, and determines whether to publish news or not. If the news is worthy of publishing, then the admin is publishing news. If it is not feasible to publish, then the news is saved as draft news. After the activity is finished, the admin can end the activity on the close menu.

### Expert

If the user is an expert, go to the expert dashboard menu. In this menu, the expert creates and saves an article before deciding whether or not to upload it. If the article is not eligible to be uploaded, the expert saves the article in draft articles and uploads it as a draft article for further inclusion in the article list. If the article deserves to be uploaded, then it is included in the article list, which is then addressed to the admin to determine whether the article is feasible or not. Furthermore, if the expert and admin decide the article is feasible, then the article is published. After the activity is complete, the expert and admin can end the activity by closing the website.

### Profile (log in)

The user as an admin or expert goes to the profile menu (log in), there are several options (bookmark content, like content, activities, and view/share), and the user can end the activity by closing the website.

### Log out

After entering the profile menu (logging in), the user as admin or expert can also go to the log out menu to enter the landing page (guest) menu, where they can choose several options (view/share, activities, like content, and bookmark content), then end the activity by closing the website.

Experts will write and create the articles in this design. The written articles will be objectively reviewed by the administrator. This procedure is designed to determine which articles will be published based on whether or not the topic is being discussed. If the article is eligible, the admin will post it straight away, but if it is not eligible, it will be returned to the expert so that they may rewrite and modify the substance of their article. Only the administrator has the ability to write news.

## Flow chart publish articles and news

The flow chart of published articles and news is depicted in [Figure 4](#).

### Publish articles

Expert or admin goes to the login menu.

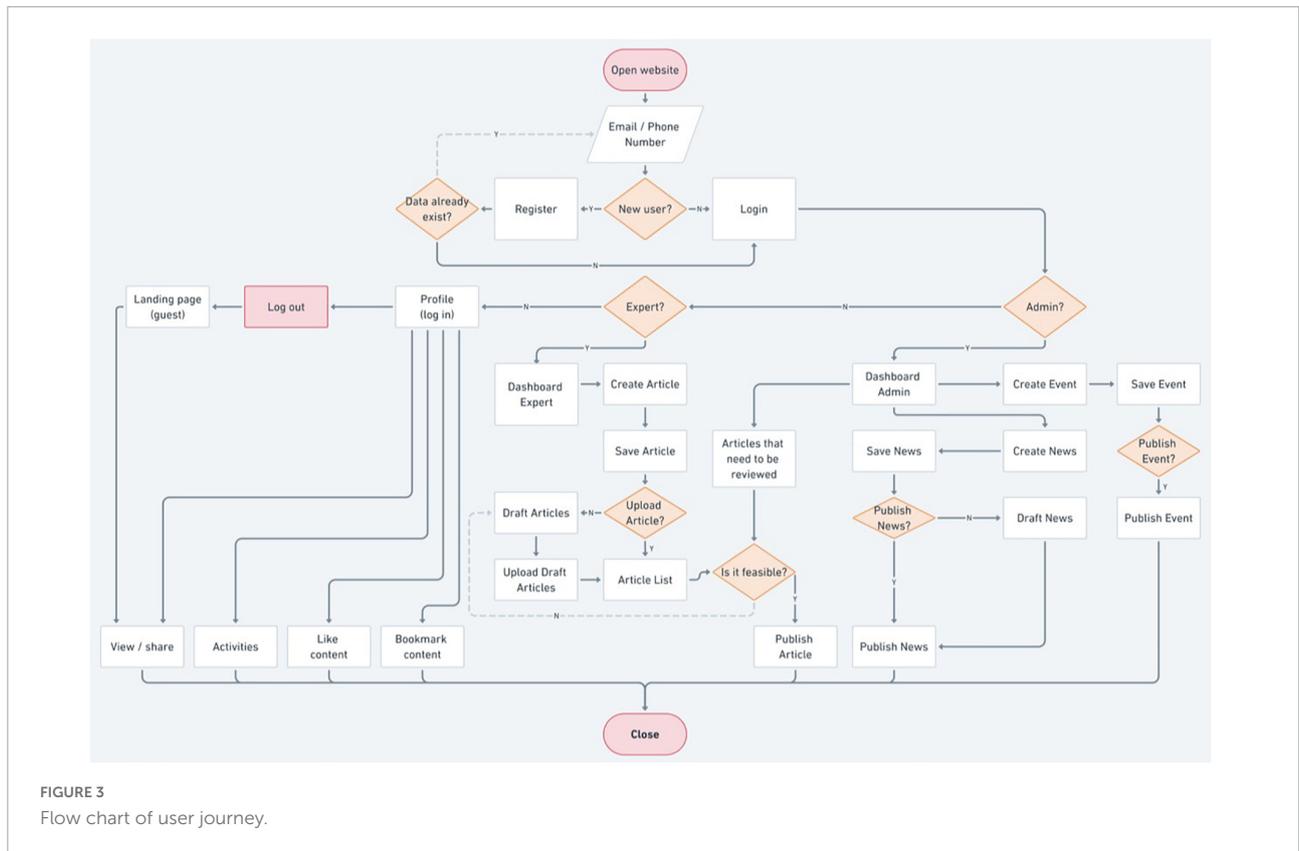


FIGURE 3  
Flow chart of user journey.

**Expert**

After logging in, the expert selects the profile menu (top right corner), selects the “dashboard” menu, then selects the “article” menu tab, continues by selecting the “create” article menu and goes to the “write articles” menu. After the expert determines whether the articles that have been written are eligible to be saved and submitted for publication or not. If the expert decides that the article is eligible to save and submit a publication, then the article is addressed to the admin to determine the review eligibility of the article. If the article meets the qualifications, then the admin will publish the article. However, if the article does not meet the qualifications, it is directed back to the expert to fix the article, and then returns to the save and submit publication process to be addressed back to the admin in the review eligibility of the article process until the article meets the quality and finally the article is eligible to be published.

**Admin**

After logging in, the admin goes to the profile menu (top right corner), then selects the “dashboard” menu, and then selects the “list review” menu tab, proceeds to select the “details” menu, then goes to the “review eligibility” menu. If the article meets the requirements, then the admin will publish the article. However, if the article does not meet the qualifications, it is redirected to the expert to fix the article, and then return to

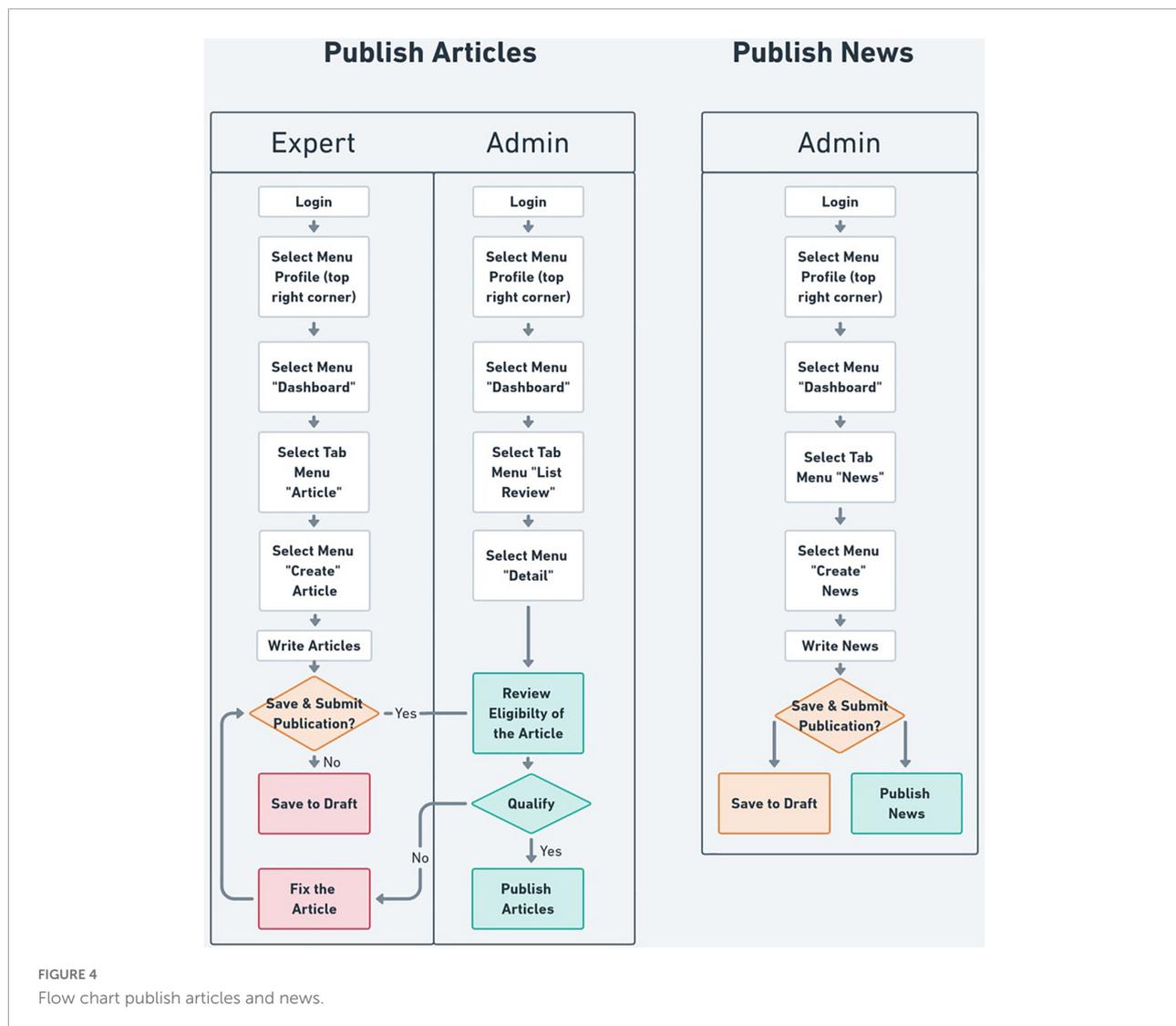
the save and submit publication process to be addressed back to the admin in the review eligibility of the article until the article meets the quality and finally the article is eligible to be published.

**Publish news**

Admin goes to the login menu, then selects the profile menu (top right corner), then select the “dashboard” menu. After that, the admin selects the “news” menu tab, then selects the “create” news menu to write news. After the news has been written, the admin determines whether to save and publish it or not. If the news deserves to be saved and published, then the admin publishes the news, otherwise, if it is not worthy to be published, the news is stored in “save to draft.”

The experts are debating (discussing) a subject, a speaker, and a date for the workshop. Following that, the experts will request that the admin create a workshop on the “Butiko” website. Senior students and experts may both be workshop participants; both must log into in to apply for the program. Admin sends an email as a confirmation of registration. For the unique workshop, the certificate would be accessible for download.

The next phase will serve as a stage of monitoring and assessment. Data from the previous phase, such as community member information, statistical data from articles, workshops, and items liked by community members, may be utilized as the basis for the next development. Monitoring can be done



through evaluations and quizzes to cross-check the agents’ and their children’s comprehension. In the future, a forum will be available to receive comments and serve as a hub for engagement from the virtual community.

### Flow chart of workshop or webinar making

Figure 5 illustrates the flow chart of a workshop or webinar.

#### Workshop making

##### Expert

Experts discuss to define topics and speakers, then set a date to determine if they get a date or not. If the expert hasn’t gotten a date, go back to the discussion stage for a date. Meanwhile, if the expert gets a date, then approve and submit it to the admin.

##### Admin

The admin goes to the login menu, then selects the profile menu (top right corner). After that, select the “dashboard” menu, then select the “workshop/webinar” menu tab. Next, the admin creates a workshop or webinar, then enters related information, saves it, and then publishes it for open registration.

#### Register for workshop/webinar

Workshop or webinar participants consisting of senior participants, admins, and experts go to the login menu.

##### Senior participant

After logging in, the senior participant selects the “event” menu, then selects the “workshop/webinar” menu tab, and then registers. After registering, the senior participant determines whether the workshop or webinar is paid or not. If a senior participant chooses not to pay, then go to admin to approve the participant’s registration. Then the admin will send a

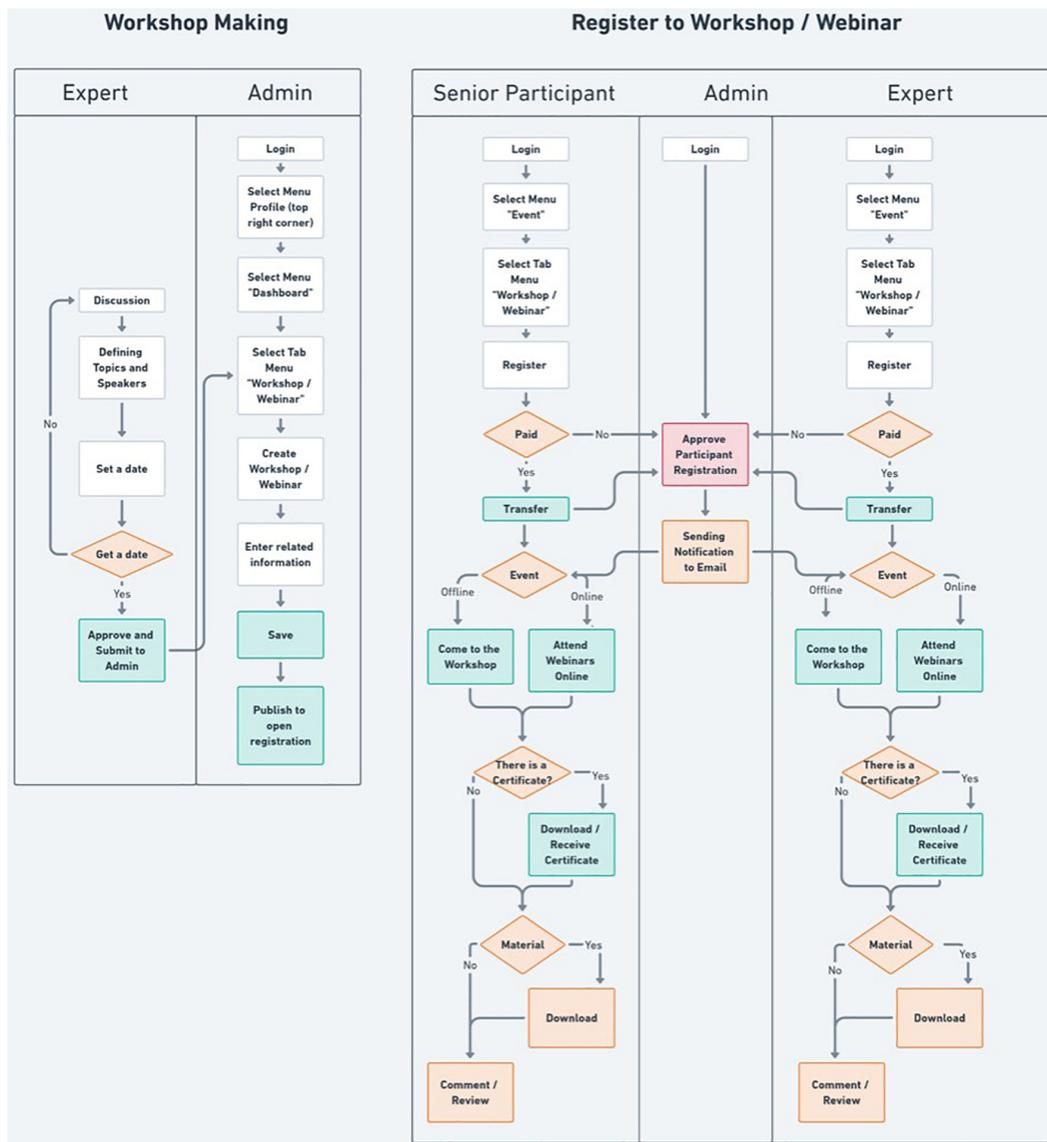


FIGURE 5  
Flow chart of workshop or webinar making.

notification via email to the senior participant to attend either an online (come to the workshop) or an offline event (attend webinars online). If the senior participant attends the event, first determine whether a certificate is available (if no certificate is available, the participant can immediately review the available material or not); if yes, proceed to download the received certificate; and if there is material, then download it. If no material is available, the senior participant can write a comment or review.

**Admin**

After logging in, the admin goes to the participant registration menu, then sends a notification via email.

**Expert**

After logging in, the expert selects the “event” menu, then selects the “workshop/webinar” menu, and then registers. The expert determines whether the workshop/webinar is paid or not (if not paid, then go directly to the admin to approve participant registration). Meanwhile, if the expert determines the paid workshop or webinar, they go to the transfer menu for offline or online events. If the expert chooses an offline event, then the expert comes to the workshop; if the expert chooses an online event, the expert attends online webinars. After attending the event (offline or online), the expert reviews whether there is a certificate or not. If the event that has been attended is not provided with a certificate, then the expert reviews the

available event material or not (if no direct comments or reviews), if yes, downloads the material, and then provides a comment or review.

## Conclusion and further work agenda

Building a virtual community with character education to prevent corruption is very much needed for women or mother and their children, especially for marginalized families. Given that marginalized families tend to lack access to knowledge communities, through the “Butiko Community,” it is possible to empower women or mothers and children to engage in virtual communities. The anticorruption character education virtual community is designed to systematically involve women or mothers and children, panel experts, and administrators. In the “Butiko Community,” free education is provided for children, women, or mothers from the panel experts as teachers to provide material and guide discussions on sharing and exchange of knowledge and experience related to character education to prevent corruption. Besides providing free access to education for marginalized mothers and children, the advantages of this virtual community, framework design are systematically compiled consisting of the search for partners, making syllabi and rules, monitoring, and evaluation. So that it helps women or mothers to build good character in their children to prevent corruption. Moreover, in “Butiko Community” there is also feedback available to discuss the Agent’s knowledge from the previous learning. More interestingly, the “Butiko Community” also provides rewards as a result of evaluation for participants and experts with the best performance achievement. Through this reward, it is hoped that can be a motivation to maintain enthusiasm for all members of The “Butiko Community” to continue participation, develop and maintain the sustainability of virtual community character education to prevent corruption to be even better.

Next to the future agenda, efforts are needed to implement this framework design and ask or invite people to participate, measure the acquisition of knowledge and the effectiveness of the framework. The platform’s future development might

include websites and mobile applications to allow for more participant involvement.

## Data availability statement

The datasets presented in this article are not readily available because datasets is restricted. Requests to access the datasets should be directed to SN ([nugrohosbm@lecturer.undip.ac.id](mailto:nugrohosbm@lecturer.undip.ac.id) and [nugroho.sbm@gmail.com](mailto:nugroho.sbm@gmail.com)).

## Author contributions

SN: conceptualization and design. IS: editing, reviewing, and supervision. OF: writing and critical revision of manuscript. MP: data analysis and interpretation. AF: drafting manuscript. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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