

Article

Research on Revitalizing Aboriginal Culture and Application of New Media in Taiwan

Chi-Hsiung Chen ¹, and Chin-Yi Ku ^{2,*}

¹ Professor, Department of Creative Product Design, Asia University, Taichung, 41354, Taiwan; chenchs@asia.edu.tw

² Ph. D. Candidate, Department of Digital Media Design, Asia University, Taichung, 41354, Taiwan;

* Correspondence: demi0914@gmail.com; Tel.: +8864 2332 3456.

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Abstract: Ethnic culture usually is formed strongly by the majority, and then integrates the culture of the minority, resulting in colonization and eradication. Aboriginal culture was the accumulation of the wisdom of various ethnic groups. Due to the integration of ethnic groups and cultures, Taiwan's aboriginal culture has gradually disappeared. The issue of cultural revitalization has become an issue of concern to contemporary aboriginal people. Carrying out the literature review, we sort out the origin and development of the cultures of various ethnic groups. The documents related to the rights of indigenous peoples in the world, the current application status of traditional media, new media, and the indigenous ethnic groups in Taiwan are discussed. For this article, in-depth interviews were conducted with Aboriginal scholars and the media. Grounded theory was used to collect, analyze data, and interpret the process of inductive analysis. The qualitative computer software Nvivo was used to analyze and code to establish a framework matrix for interview results. In the concept coding, the category was derived and the concept of the main axis was established, and the chart of the visualization of the analysis results was presented. The results presented that the use of new media to revitalize aboriginal culture was currently the best way to obtain the greatest benefit at the least cost. Tribal people used social media to connect in traditional festivals, clan cooperation, and clan talent and knowledge cultivation. In the topic of cultural revival, more different aspects of thinking were stirred up. In addition, in terms of cultural inheritance, "talent development" was an issue that all ethnic groups need to pay more attention to. By cultivating ethnic talents, improving self-cultural identity, and joining the ranks of cultural revival, endowed with a sense of mission to inherit indigenous culture.

Keywords: aboriginal people, cultural revival, media integration, new media

1. Introduction

There is an island located in Taiwan and the Pacific Ocean. The land area is small, and various ethnic groups live together with the Han nationality as the main population. People from southern Hokkien (immigrants from Zhangzhou and Quanzhou), Hakka people (from four counties on land and sea), and from other provinces (from 36 provinces) accounted for 97.53% of the total population of 22.76 million. Among them, there are about 580,000 aborigines, accounting for 2.47% of the total population. The aborigines were divided into Amis, Atayal, Paiwan, Bunun, Puyuma, Rukai, Tsou, Sai, Xia, Yami, Thao, Kavalan, and Taroko. There are 16 ethnic groups, including the Sachizaya, the Sedek, the La Aluwa, and the Kananafu. As far as Taiwanese aboriginal culture is concerned, each ethnic group has its own culture, language, customs, and social structure. Culture has an important source of history, and is the best reference for exploring the development of Taiwanese culture (Wu, Chen, and Chen, 2018).

Under the rapid development of the new era, the integration of ethnic cultures is a trend, regardless of race and the number of people. However, those with a large number of people usually form a strong culture, integrate the culture of minority groups, and then produce the theory of colonization and annihilation. The colonial policies of the past, Han chauvinism, and Unificationism violated the culture of the aborigines but also created a narrow worldview causing the disappearance of ethnic groups. There was the elimination of minority cultures or colonization by a strong culture, and a continuous cycle of cultural colonial integration in the world (Chen, 2007). Cultural colonial integration has many orientations in traditional value orientation, commercial profit orientation, and academic education orientation. In these orientations, cultural integration faces the problem of cultural preservation of ethnic minorities, and it is necessary to further analyze the significance of their cultural values (Lin and Chen, 2008). As far as traditional values are concerned, aborigines are disadvantaged in terms of education, culture, economy, and politics because they are ethnic minorities. The restoration and inheritance of traditional culture are not done by outsiders, and foreign aid is only an auxiliary function. The inheritance of culture must be based on the actual way of life, relying on the tribal people to practice and continue from generation to generation. This is a way of life in inheritance. The stability of the aboriginal people, the stability of the tribe, and the stability of government policy support are the factors for the continuation of the aboriginal culture.

Aboriginal culture is the accumulation of the wisdom of various ethnic groups. They regard culture as an ecological system, and diverse cultures create more diverse social values. Due to the integration of ethnic groups and cultures, the aboriginal culture has been gradually disappearing in Taiwan, because the socioeconomic status of the aboriginal people is generally not high. Most people are still in poor economic conditions, hoping to have a stable life. Only a few people with good economic conditions are willing to join the ranks of cultural revival. However, relying on a few people alone was not enough, and was not a long-term solution (Lin, 2013). The revival of aboriginal culture requires cognitive warfare to identify culture. The so-called cognitive warfare refers to top-down cognition and identification of aboriginal culture. The second is to promote and design the importance and historical context of aboriginal culture. It is needed to be promoted through new media so that more people can understand the aboriginal culture and gain more recognition with support (Chen and Lu, 2021). The revival of aboriginal culture requires thinking about multiple aspects such as language, cultural rituals, traditional crafts, architecture, and music. There is the accumulation of the life experience of the aborigines, and the traditional knowledge of the aborigines is also a traditional history. There is an accumulation of culture which becomes the development history of an ethnic group. The Saisiyat's Pasta'ay and the Amis's Harvest Festival were the core of an ethnic group's culture such as language, clothing, songs, and music, which passed down through holding (Wang, 2014).

The universalization of smartphones is an opportunity for the rise of new media. Everyone knows the world's affairs with a mobile phone, and there is eliminating the need to search for information with computers and TV broadcasts. Through the real-time dissemination of new media, people directly absorb and respond to information, and indirectly generate interactive behavior patterns. There is an interactive and integrated media form platform (Qiu, 2016). New media is based on digital technology, network technology, and communication technology to establish an interactive and integrated media form. For example, the familiar Facebook, Instagram, and Line are currently widely used by the public. Whether it is life information, message transmission, or interactive behavior, they provide instant information and responses, showing their superior convenience, quickly integrating into the lives of the general public, and becoming an indispensable tool for life (Hong, 2019). Thinking and analyzing in reverse, new media with a large number of users not only crosses national boundaries but also becomes a channel of convenience and interaction. People are used to promoting products, expressing themselves, complaining about grievances, transmitting information and interacting. Regardless of gender, age, race, and occupation, the recipient groups of new media receive diverse information, which also improves the interactive behavior pattern.

The authors are educators with Aboriginal identities. Through long-term observation of the decline of aboriginal culture and in-depth media reporting on aboriginal culture, there is a feeling that aboriginal culture is slowly disappearing. The next generation of Aboriginal descendants is no longer familiar with their culture, language, dress, and songs, which is also a concern of this generation of Aboriginal people. When the culture disappears, the tribe's optimistic and cheerful laughter, festive songs, and handicrafts will only remain in memory. In light of this, there is a need to revive the aboriginal culture. Emotion for aboriginal culture and the historical responsibility of this generation need to remind the next generation that they are aboriginal people. Nowadays, being affected by reality, environment, time, and money, only a small number of aborigines can participate in cultural revitalization. With the rapid integration of new media into society, a possible way of cultural revival can be found. The advantages of new media can save manpower and cost. Using the power of new media to start a cultural revival, the public could better understand the value of aboriginal culture and preservation.

Therefore, focusing on the integration and application of Aboriginal culture and new media and the premise of revitalizing the aboriginal culture, we found user preferences and innovative images of new media in multiple perspectives and inspirations and different approaches. After reviewing the related literature and phenomena, we discussed the aspects of the contribution of new media to the cultural renaissance and suggest a way for the possible development of the application of Aboriginal culture in new media.

2. Literature Review

This research was carried out to first discuss the origin and culture of the aborigines based on the historical background and then analyze the reasons for the decline of aboriginal culture. Secondly, we analyzed the phenomenon of new media applications, discussing the replacement of traditional media by instant, rapid, and diverse new media. The power of traditional media is no longer as good as that of new-age media, which is an interactive and integrated form. New media is created and designed using scientific ideas and methods. We discuss how to transform traditional design methods which are perceptual, empirical, static, and manual, into rational, scientific, dynamic, and computerized methods (Zhang and Zhang, 2021) and how to use new media to design aborigines' cultural revival, a way to explore the future of aboriginal culture.

2.1. *Origin and rights of aboriginal people*

The aborigines were called "Dongfan" in Taiwan's ancient books, "Fan people" in the Qing Dynasty, "Gaosha people" during the Japanese colonial period, and "aboriginal people" after Taiwan's recovery to eliminate racial discrimination. Liu (1997) researched that Taiwan's aborigines belonged to the Austronesian language family (Austronesian). The Austronesian nation was the most widely distributed in the world, starting from Madagascar in the southeast of Africa in the west, Easter Island in the Pacific Ocean in the east, Taiwan in the north, and New Zealand in the south. Early Taiwan was inhabited by Austronesian populations before the Han nationality immigrated. There were living areas spread all over the island. In the 18th century, people who immigrated from Zhangzhou and Quanzhou in mainland China began to reclaim the flat land in the northeast and west of Taiwan in large numbers. The aborigines gradually migrated to the mountainous areas in Taiwan's Central Mountain Range, Eastern Rift Valley and coastal areas as the main areas of activity. Until the Han Chinese immigrated in large numbers, the aborigines were isolated and had little contact with the outside world. Therefore, the preservation of pure Austronesian culture was preserved for each ethnic group in architecture, sacrifice, utensils, weaving, social system, and the life which are unique and show the wisdom and life philosophy of the ancestors of each ethnic group (Lin, 2013). The population of aborigines has increased from 110,000 in 1906 to 580,000 in 2022, accounting for 2.47% of Taiwan's total population and belonging to a minority group. The high degree of originality and diversity of aboriginal culture rivaled those of other Aboriginal people around the world. Therefore, Taiwan's aboriginal culture is the most typical expression of Taiwan's native culture.

The gradual disappearance of language, handicrafts, and ceremonies of aboriginal culture is the most worrying issue for contemporary aboriginal people. For more than 30 years, aborigines have spoken out through various media in an attempt to arouse the attention of young aborigines and the government and through public opinion representatives. Finally, in 1996, the aboriginal Committee was established to manage and promote matters related to aboriginal people. In 2005, Aboriginal Television was launched to spread Aboriginal culture and education. In 2016, the Aboriginal Association's "Indigenous Ethnic Language Use Status and Ability Survey Report" showed that ten ethnic languages such as Kankanaefu and Shahrwa have been listed as endangered languages and young aboriginals who did not speak ethnic languages. Every year, the aboriginal language disappears. In 2017, Taiwan's National Assembly passed the "Law on the Development of Indigenous People's Languages" in the third reading, which stipulated the indigenous people's language was the national language, which means that the country attaches great importance to the Aborigines. With the help of government agencies, the aboriginal culture was not disappearing as quickly as before. Therefore, how to arouse young aborigines' attention to culture is a key issue to the future survival of aboriginal culture out of the identity and belonging of the tribe.

Cammi's (2021) pointed out that culture was an important factor in the well-being of Aboriginal people. Colonialism damaged and dispersed Indigenous cultures around the world (Cammi, 2021). There were indigenous voices and perspectives often ignored in Australia. The reason was that colonialists deprived indigenous peoples of their rights and culture for hundreds of years. There was the denial of Indigenous citizenship, autonomy, and sovereignty. The indigenous people are increasingly turning to social media to shed light on how colonialists continue to oppress Indigenous communities and cultures (Bronwyn, Abraham, and Jenny, 2022). On the Oceanian Island of New Caledonia, from 1853 to 1945, French colonialism ignored human rights. For the Kanaks, the region's predominantly indigenous people, the custom became a matter of respect for their collective values and identity. The colonialists had no respect for their cultural customs. After more than 30 years of struggle, France agreed that the Kanaks could retain their customary laws. In 1982, the local government established civil courts with customary jurors to enforce customary law. There was the key to the success of a common destiny based on the cultural heritage of all kinds. Case law increasingly took into account Kanak cultural customs and institutions as a means of breaking the colonial deadlock (Regis, 2014).

In Congo, an African country, due to poor management of the land and forest government, the logging industry has expanded and caused deforestation. The local aborigines who lived in harmony with the forest lost their livelihoods, resulting in poverty and land conflicts. After years of fighting, Congo passed a bill to protect the special rights of local indigenous people in 2021. This historic initiative was a precedent and inspired forest guardians in the Congo Basin and enabled local Aboriginal people to have the same rights as other communities, and to communicate and coexist peacefully (Bronwyn, 2022).

Fiji, an island country in the South Pacific, was composed of a majority of ethnic groups including Indians, Rotumans, European Caucasians, Chinese, and other Pacific Islanders. Among them, the Rotumans were a unique ethnic group with a small number of people, and their language was included in the list of endangered languages by UNESCO, which was caused by a large number of out-migration. The Rotumans found the use of information transfer and communication technology applications fused in new media. The Rotuman language was a tool for revitalizing and re-establishing culture. Facebook employed more Rotumans to inform and educate them about their language and culture. Two Cultural Revitalization Bills were introduced by the Fiji Parliament in 2015, having an impact on the lands and customs of the Rotuman (Jason, Rufino, and Renata, 2018).

2.2. Aboriginal culture

There were currently 16 aboriginal ethnic groups in Taiwan, and each tribe has its own culture and art. In terms of artistic expression, each has its uniqueness and artistic aesthetics. Through art, legends, body decoration, music, dance, ballad weaving, and woodcarving, the tribal people convey the tribal group's life experience, ancestral beliefs, and spirit of admiration for the earth. The artistic achievements that present social and cultural characteristics make people feel the wisdom of life and the cultural spirit behind it (Liu, 1997). Aborigines' aesthetics accumulated from life experience to a practical level. Practical sublimation to the spiritual level gradually shapes the concept of aesthetics which is combined with life, beliefs, legends, ancestral spirits, and spiritual aspects. There is a philosophy in experience and life as a representation close to formalism and the pursuit of the order and harmony of things (Lin, 2003). The beauty of the life of the aborigines is derived from the utensils woven and made by hand and the demand for an aesthetic feeling, which pleases the public and represents the beauty to meet the needs of pursuing objects, adorning life, and offering sacrifices. The artistic aspect comes from life including myths and legends, history, living objects, clothing, body decoration, and hunting equipment. Through tribal people or craftsmen and from their respective cultural totem representation images, the patterns are extracted and presented in the daily objects used such as handicrafts and clothing. In recent years, the design of cultural and creative products is inherited by allowing more different ethnic groups to see the cultural characteristics of the aborigines (Wang, 2014).

The most obvious difference among Taiwan's aboriginal groups is the representation of totems. Most ethnic groups use exaggerated and bright colors as a sign of the ethnic group. For example, Ami's costumes are decorated with gorgeous colors and plant patterns. Paiwan's are decorated with a sun totem, a hundred-step snake pattern, and a humanoid pattern. Atayal rhombus shows a parallel, geometric pattern, and the spiral sun patterns, zigzags, triangles, and humanoid patterns are presented by the Dawu people. The swastika script and geometric patterns are made by the Saisiyat people. The meaning represented by this totem is the aesthetics of the aborigines, representing the aesthetics presented by legends, life, nature, spirit, belief, and the perception of ancestor spirits. The feelings given to the aborigines are comfortable, beautiful, special, balanced, harmonious, unified, and strong in line with the principles of life experience aesthetics. Aborigines might not know aesthetics or have studied art. This aesthetic experience and perception come from their understanding of life, nature, spirit, and beliefs (Liu, 1997). Aboriginal culture seems to have an inseparable relationship with color, and each ethnic group has a symbolic tribal color. The aboriginal society has passed their cultures down from generation to generation through ancestral inheritance and learning in tribal workshops. Tribal colors and traditional learning are both the establishment of a value in Aboriginal society. The national color preference is more of a social reason and, colors are obtained in life experience and environment. For example, the red color on the clothing of the Atayal ethnic group is from the plant called yam palm and juice dye in the natural environment. Therefore, the common Atayal costumes are mostly red. Weaving with totem patterns has become the traditional clothing of this ethnic group. The distribution of aboriginal ethnic groups and the use of cultural colors are shown in Table 1.

Table 1. Aboriginal ethnic group distribution and cultural color usage table

Ethnic group	Color	Distributed	Application
Amis	red, black, white, yellow, green	Huadong area	Clothing, crafts, architecture
Atayal	red, black, and white	Northern area	Traditional weaving, face tattoos
Paiwan	red, black, white, yellow, blue	Taitung Pingtung area	Architecture, glass beads, decoration, clay pot
Bunun	red, black, white, yellow, green	Southern area	Decoration, Clay Pot, Glass Beads
Yami	red, black, and white	Lanyu area	Textiles, sculpture, pottery, crafts Canoes, decorations, clay pots
Thao	black, brown, blue, gray	Nantou area	

Table 1. cont.

Kamalan	red, black, white, yellow, blue	Hualien area	Weaving, Bamboo Weaving, Wood Carving
Taroko	red, black, white, yellow, green	Hualien area	Wood carving, decoration, textile Textile, woodcarving, decoration
Puyuma	red, black, white, yellow, green	Taito area	Wood carvings, decorations, clay
Rukai	red, black, white, yellow, green, blue	Kaohsiung and Ping-Tung areas	pots, bamboo weaving decoration, craft, woodcarving
Tsou	red, black, white	Chiayi Nantou area	Weaving, bamboo weaving, Wood carving, decoration
Saisiyat	red, black, and white	Miaoli area	Clothing, crafts, architecture
Sakizaya	gold, red, blue, brown, yellow	Hualien area	Bamboo weaving, textile, craft
Seediq	red, black, white, yellow, green	Nantou area	Clothing, woodcarving, craft
La Aruwa	red, white, yellow, green	Kaohsiung area	Decoration, textile, craft
Kanakanavu	red, blue	Chiayi Kaohsiung area	

Data source: compiled by researchers

Ethnic art expresses the broad and diverse contact with society and the world. The traditional tribe's ethnic art has a worldview. However, most of what needs to be absorbed into the traditional culture of the ethnic group are to understand the aesthetic context of the cultural elements (Wang, 2014). In 2017, in the opening performance of the World Games in Taiwan, to show the beauty of local culture, the combination of aboriginal music and dance, ethnic totem art, and sound and light impact was performed so that people from all over the world could know the beauty of Taiwan aboriginal culture. There was the beginning of the integration with different ethnic groups and aesthetic experiences, and the use of aboriginal aesthetic perception in performances has undergone a qualitative change. Knowing, understanding, and then using beauty, the totemic elements of various ethnic groups were shown to all countries in the world. In 2019, the Taoyuan Aboriginal Cultural Center exhibited the latest contemporary artworks by well-known Taiwanese aboriginal artists. The content was an interpretation of the aboriginal people's sublimation of the land, culture, ancestral spirit, and self-aboriginal spirit. The fishing nets, driftwood, wire, net bags, and hemp rope were exhibited to various groups of locals. Tribes accessed the media for showing their artistic creations. The totems dragged the interest of various ethnic groups presenting the artistic aesthetics of the aborigines and also displaying diverse and rich creative features through sculpture, weaving, and painting (Chen and Lu, 2021). The importance of aboriginal culture and art was not only the presentation of local culture but also the accumulation of an ethnic group's life experience. The transformed art form is a symbol representing the cultural spirit of the ethnic group. The spreading of culture through the power of media demonstrates the importance of cultural revival.

2.3. Trends in the new media era

With the rapid development of technology, new media has emerged. New media has rapidly changed the way people obtain information, forming interactive and integrated platforms under the Internet, digital technology, network technology, and communication technology (Hong, 2019). New media is presented mainly on the mobile Internet formed by the fusion of the Internet and mobile media. Digital media is expressed with immediacy and interactivity. Mainly, the application of integrated broadband information networks, digital technology, and terminal mobility is the driving force behind the emergence and development of various new media (Zhou, 2019). In a broad sense, new media is subdivided into instant messaging, podcasts, portal websites, Internet TV, mobile newspapers, mobile TV broadcasting, search engines, online animation, online games, e-books, online magazines, online broadcasting, digital mobile TV, and virtual communities, Wikipedia, Internet literature (Liu, 2021). All digital media communication is collectively referred to as new media. Among them, Twitter, Facebook, Instagram, YouTube, and Line are the most widely used by the public. They can download instant messaging through the mobile APP to obtain life information with convenience.

The influence of traditional media still exists. However, it is gradually being replaced by new media, especially among young people. According to the Eastern Online survey of the 2020 Eastern Consumer Marketing (E-ICP), those aged 13 to 25 spent an average of 4.6 hours a day online, compared to 4.1 hours by whole-age groups. 13–25-year-olds spend 3.1 hours online on mobile. Using LINE for instant messaging and online listening to music videos on YouTube, PPS, FB, and IG were the most common online behaviors of young people aged 13–25. When they use new media, they enjoy interacting with their friends and expressing themselves. In addition, 65.7% of people aged 20–34 are watching audio-visual information through the TV network. These young people have the double shadow lifestyle to obtain information from multiple channels (Dongfang Online, 2022). Young people are important users of new media along with people in other age groups. New media is now used by everyone.

The use of new media has immediacy and convenience with advantages and disadvantages. Ateeq (2021) pointed out that social media and online information platforms were subverting the business and operation methods and social operation models of enterprises. Relevant literature has given a lot of analysis and research on how social media provides benefits and affects the living habits of the public. However, the research has paid little attention to the ethics of new media. Especially, in an era when violent bullying, hate crimes, and fake news were increasingly common, the negative behaviors generated by new media require research and analysis (Ateeq, 2021). For example, in the 2019 Christchurch terrorist attack, one of the gunmen live-streamed the attack on Facebook for 16 minutes. Before the attack, he released a manifesto titled ‘the Great Overthrow’, outlining his attack and claiming inspiration from the British League of Fascists. The shooter's Twitter account was used to post neo-Nazi mantras and black suns, as well as xenophobic remarks. This live broadcast was forwarded to multiple live broadcast platforms, including LiveLeak and YouTube's online platforms. The background of terrorist attacks facilitated by network technology reveals the social and ethical issues that need to be paid attention to in the use of new media.

2.4. Integrative design theory

In the era of new media networks, content includes sales, business, and communication behaviors, all of which are disseminated to the public through new social media. Thus, the revival of aboriginal culture is an inevitable direction. The use of technological networks to spread the revival of aboriginal culture is useful. Without spending a lot of manpower and money, the effect of aboriginal culture promotion and interaction can be achieved (Zhou, 2019). This tool allows a thought about how to design because new media is a product of the new era. Old thinking and theories might not be able to satisfy modern behaviors. Only the revitalization structure of local culture is found in the theoretical framework of new-era design and the problem and an integrated design in line with the new media (Liu, 2021).

Modern design theory is the direction of using scientific ideas and methods to create designs under the model of scientific and technological products. Design process theory is studied for the components and tasks of the design process. In a word, modern design theories and methods have been changed from traditional design methods and include perceptual, empirical, static, and manual methods, to rational, scientific, dynamic, and computerized methods (Zhang and Zhang, 2021). Modern design theory refers to developments in design laws with distributed resources and environmental design activities. The purpose is to promote information transmission and comprehensive utilization of distributed resources and improve design competitiveness. The advantages of new media lie in immediacy, speed, and diversity based on modern design theory and its integration. The application of modern creative design thinking is not eliminated in the application of new media (Zhou, 2019).

Dominique (2013) pointed out that the relationship between design and new media was to observe its fusion design from the perspective of design methodology. The methods included network media design, user interface design, instant messaging system application, and self-media system application. Strengths and limitations in design practice were also described. The content included the distinction between the real and virtual worlds, positioning development and design as the direction of social and cultural evolution. Understanding the evolutionary nature of human and sociocultural phenomena also has the potential to generate a converging relationship between design and new media (Dominique, 2013). The integrated design created real and virtual functions. Life in the real world is complex, dynamic, and uncertain. The application and integration of new media help people solve the difficulties encountered in the real world and relatively provide convenience (Ateeq, 2021). Therefore, thinking about design needs to be carefully and accurately described and explained. It is necessary to seek sufficient understanding to make an informed decision. If the fusion design meets the actual needs, the problems encountered in all aspects of new media must be considered. Using design thinking to solve problems and applying it to new media, cross-age changes for the convenience and habits of human life can be brought in the future (John, 2003).

2.5. Summary

Aboriginal people represent the earliest inhabitants of the land. For the aborigines, the Han nationality was an immigrant, and the subjectivity of aboriginal culture needs to be respected as Taiwan's native culture. Every nation has its culture and needs preservation. However, under the environment and the progress of the times, the aborigines are forced to sinicize. This is the long-term reality of the cultural reincarnation of all nations in the world. The majority of ethnic groups devour the minority and the history of big countries destroys small countries. With the development of modern Internet technology, the application of new media has given the convenience of life crossing the boundaries of time, distance, place, and country. One can keep abreast of world events at home on a mobile phone or the Internet. The advantages of this new media enable the revival of aboriginal culture for its clothing, music, wood and bamboo carving, painting, and pottery. Through this new media, people become to know of aborigines. The era of the Internet without borders affects not only Taiwan but also the whole world. The dissemination of this new media method has substantially helped the revival of aboriginal culture and has also created the possibility of the future of aboriginal culture. The future of aboriginal culture does not depend solely on aboriginal elements. There is also a need to integrate the cultures and contemporary values of other peoples. Through the diverse characteristics of new media, after extensive integration and application, or a certain amount of continuous attention, more support is needed. There are many more possible directions for cultural renaissance. Cultural revitalization must provide aboriginal people with stable living conditions such as employment function training, social media education, tribal industry development, and the direction of ethnic cultural reproduction. First, basic national education must be provided. No matter the age, they need to be educated about the proper integration of Aboriginal culture and new media. The power of social networking makes it possible to promote and disseminate Aboriginal culture.

3. Research Methodology and Design

We analyzed the issues of Taiwanese aboriginal culture and new media applications and explored the shared integration and understanding behind this phenomenon to create hypotheses for the understanding of people, places, and social groups through qualitative research with a scientific approach. Proust proposed the nature of qualitative research to see the world from multiple perspectives (Patton, 1990). Qualitative research is mostly used in anthropology, sociology, and social science. For qualitative research, sampling analysis must be different from quantitative research. In this research, an interview for data collection was carried out. The following coding and analysis were conducted to create the research questions to broaden researchers' perspectives and thinking (Niu, 2021). Based on diverse and multifaceted data, crossover analysis was chosen to enhance the validity of the research. Huang pointed out that the description of the text needs to be detailed and profound to reflect the individual or phenomenon in a study. Therefore, appropriate words in a research method are required to reflect the nature of the research (Huang, 2016). Hammersley stated that when it came to research, there was more important to be accurate than exact, and in this respect, words needed to be selected to make no difference. There was no point in arguing about the merits of words or numbers whether for quantitative or qualitative research. The focus must be put on the rigor of the researchers' data collection and analysis process. Research findings, whether presented in coded text or numerical statistics, must be analyzed objectively and properly (Hammersley, 1999).

We selected a qualitative research method with in-depth interviews and grounded theory. The in-depth interview method is to realize the exchange and construction of opinions through the conversation between the interviewer and the interviewee in a separate and individualized interactive way. Through the process and content of the interview, the researcher can discover and analyze the respondents' motivations, beliefs, attitudes, practices, and opinions (Niu, 2021). Structured interviews were used in qualitative research and the social sciences through the face-to-face social interaction process between the interviewer and the interviewee to obtain data as a product of social interaction (Chen, 2007). Grounded theory is for bottom-up concept building from data collection and analysis to coding. Grounded theory is a method, not a theory, and is applied to data collection and analysis with an emphasis on data interpretation. Inductive and deductive reasoning processes are used through comparison and hypothesis testing, and theory building (Niu, 2021). Data analysis processes were based on grounded theory such as open, axial, and selective coding processes. After the concept analysis of the full text, the concepts were classified, and a group of concepts was named as a category. Concepts and categories were the primary tasks of open decoding, and the integration of the antecedent conditions, background context, intermediary factors, action strategies, and results of phenomena was the main axis of decoding. In addition, to develop the core category of research results, that is, the storyline and other categories were integrated to fully present the research results (Huang, 2016).

3.1. Research structure and process

The research was based on the study of Taiwanese aboriginal culture and the application of new media. There was combined with a relevant literature review to explore the relationship between aboriginal culture and new media. In terms of qualitative research, the method of in-depth interviews was used to investigate, and then the data were analyzed. To strictly code the interview data, the computer software Nvivo was used. The interview framework matrix was established through grounded theory, the categories were derived in the concept coding, and the main axis concepts were established. Then, through the production of visual charts, the interview coding analysis results were presented. Then, research conclusions and recommendations were proposed to validate the importance of this research. Based on the above discussion of the structure and process of this research, the research structure, and flow chart were drawn (Figure 1).

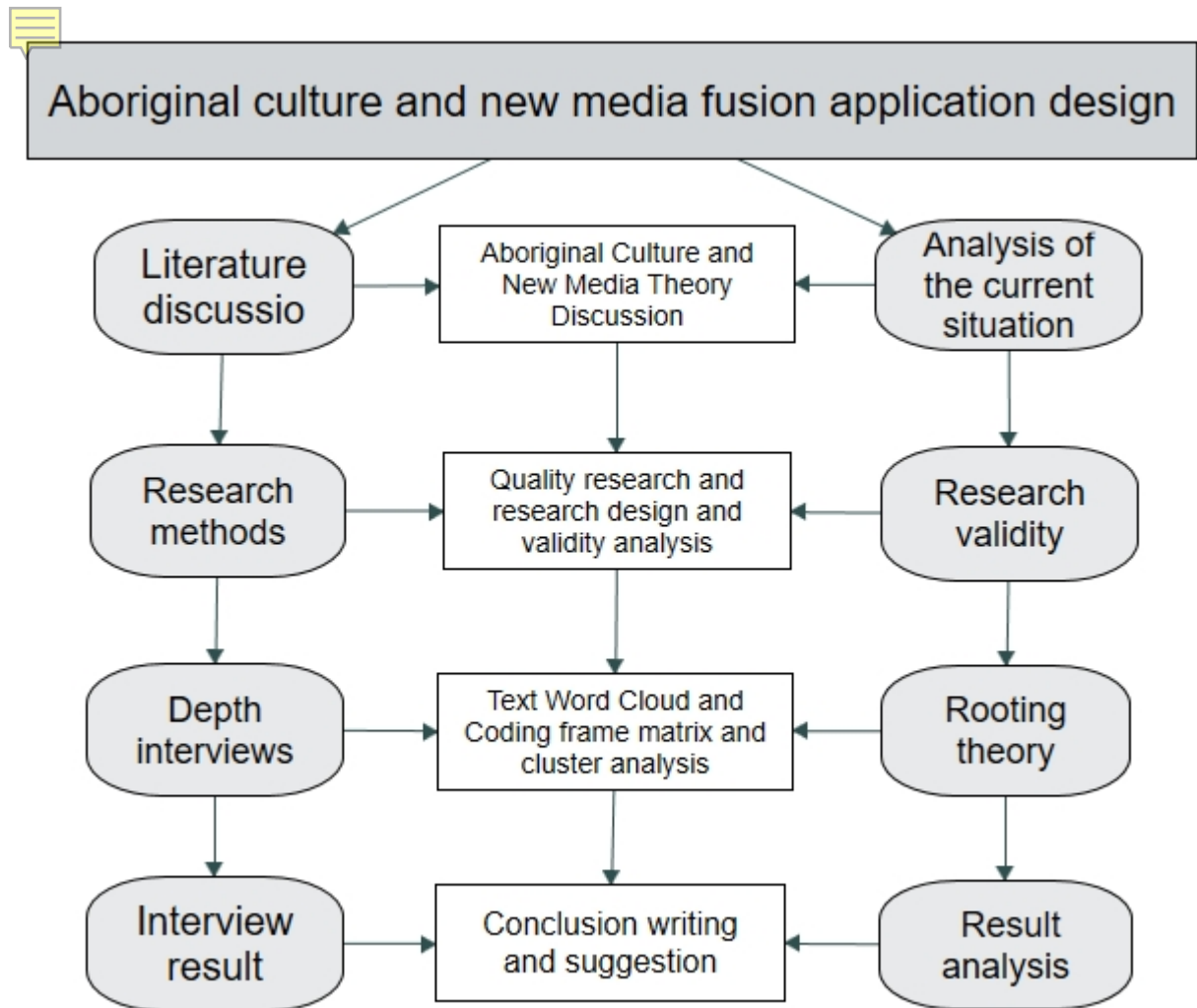


Fig. 1. Research flow chart (Data source: compiled by the researchers).

3.2. Research design and object

The research design is necessary to decide the design of methods and procedures, obtain the needed information, and specify the content of the information to be collected, the source of the information, and the procedural stages of collection. It is also to plan data collection to answer relevant research questions (Niu, 2021). This research focused on the collection and presentation of facts, and the discovery of existing factual data. Through the actual situation of aboriginal culture, the integration and application of aboriginal culture and new media were analyzed and discussed. The design process in this research included the analysis of the data according to the literature review and the current situation in the following five stages.

- 1) The first stage was to determine the research topic and establish research objectives and methods. Aboriginal culture was the accumulation of the wisdom of various ethnic groups and was subject to the integration of ethnic groups and cultures. The aboriginal culture was gradually disappearing in Taiwan, and it was required to understand how to use the application of new media to revive the aboriginal culture. Since this question fell under the social sciences, qualitative research was adopted as the research method.
- 2) The second stage was to organize, analyze, and define how to collect relevant literature and literature researched by various scholars. Finally, the literature review was taken as the basic concept and research basis.
- 3) The third stage was to establish research methods and process structure and organize a complete research process structure.
- 4) The fourth stage was to organize and convert the interview data into text files, which were encoded by the Nvivo computer. Under the grounded theory of concepts, categories, and core codes, analyze research findings and derive visualization diagrams.
- 5) The fifth stage was to propose conclusions and recommendations and describe the direction of its follow-up future research.

According to the purpose and evaluation of this research, respondents must have a background relevant to this research. Therefore, the research object was chosen from the aborigines of Taiwan, and the media served as the sample of this research object. Based on the consideration of manpower and financial resources, 4 ethnic groups, the Amis, Atayal, Paiwan, and Taroko, with aboriginal cultural backgrounds were selected among the 16 ethnic groups in Taiwan. In addition, two media reporters with more than 20 years of experience were selected as media reporters for Aboriginal TV and Dongsen TV. These six respondents were both academics and practitioners, adding credibility to this study. Interviews with the above respondents were conducted from May 5 to 30, 2022. The interview time was 1 hour, and the interviews were completed when the respondents' emotional and mental states were stable (Table 2). Interview recordings were converted to verbatim transcripts. The manuscripts were proofread many times to avoid mistakes, and the electronic file of the verbatim draft was imported into Nvivo for encoding.

Table 2. Information on interviewees

Interviewee	Ethnic group	Professional experience in years	Background	Interview date
D1/Bi O pud	Atayal	28	Aboriginal school principal	May 2022
D2/Gu O ying	Taroko	30	Aboriginal School Retired Principal	May 2022
D3/Lin O long	Amis	22	Aboriginal school director	May 2022
D4/Fan O jie	Paiwan	15	Aboriginal school director	May 2022
D5/Li O chong	Atayal	25	Aboriginal TV reporter	May 2022
D6/Ou O hui	Han nationality	22	Dongsen TV reporter	May 2022

Data source: compiled by researchers

3.3. Interview design and research tools

The interview was focused on gathering facts about a situation and discovering existing facts. This research was designed to analyze interview questions from educational scholars and the media. The feasibility of aboriginal culture and new media fusion design was explored through the interview. There were responses to research questions from educational scholars and experts in media. To understand the current situation of Taiwan's aboriginal culture and new media application, we asked the following question: what is the future development of the framework introduction of modern design theory? The in-depth interview adopted open evaluation. During the interview, the psychological and physical state and facial expressions of the interviewee were observed for future analysis. The interview questions were asked to obtain opinions on aboriginal culture needs to be revitalized, aboriginal rights issues, new media applications, and the future of aboriginal culture. After the interview, the recording was checked and converted into text files and imported to the computer for code analysis.

Due to a large number of interview manuscripts to collect data in early qualitative research, traditional dissertation analysis often takes a considerable amount of time. To save time and improve the accuracy of data analysis, computer-aided qualitative data analysis software (CAQDAS) NVivo was used for decoding analysis. First of all, for the discussion of the research questions, the

interview texts were collected and converted into text files through audio recording. Then, they were analyzed and sorted by induction, and coded by a computer. Based on grounded theory, open, axial, and selective codings were used to analyze and summarize the conceptual categories. There was a sort-out framework matrix of local culture and new media fusion design. The establishment of social association and thinking concepts made the process of thinking concept and associating. The results of the research were obtained through visualization charts to verify the purpose of this study.

3.4. Research hypothesis

Studying social science phenomena is a long process. The elaboration includes proposing research questions, theoretical discussion and literature analysis, research hypotheses, data collection, research results analysis, conclusions, and suggestions. The most relevant parts of statistics in the social sciences are the formulation of research hypotheses, the collection of data, and the analysis of results. In this research, questions were created for the revitalization of Aboriginal culture and the integration of new media.

It is necessary to explore and organize the research results and theories related to native culture and new media literature. On this basis, the research hypothesis was stated. In other words, the research hypothesis is not based on speculation but on a theoretical basis. The research hypothesis is reflected in the overall research design and data collection. Two hypotheses are used to explain the research findings: the alternative hypothesis and the null hypothesis. Only one of the final research results is supported to explain the final research results (Huang, 2016). An alternative hypothesis is used to assert the existence of independent variable effects. In other words, differences between groups are explained by the independent variable's relationship. In this research, there was an opposite assumption about the application of native culture in new media: the application of local culture in new media affected the revival of local culture. In addition, the opposite hypothesis of the research was defined as a non-directional hypothesis: the application of aboriginal culture impacted and affected the revival of aboriginal culture in new media.

3.5. Research validity

Maxwell (2001) initiated the qualitative research design and explained that research validity refers to the correctness or credibility of the description, conclusion, explanation, and interpretation of the research. At the same time, the mistakes that might be made in interviews in qualitative research were explained by Gao et al. (2001). In qualitative research, interviews were used to describe their opinions. The errors and incompleteness may affect the validity of interview descriptions, audio recordings, video recordings, verbatim transcripts, and missing signatures in the process. The effectiveness of the codec is also important. By encoding and decoding, it can be explained whether there is a subjective discussion or the reason for the event, rather than encoding it with a coder's ideology. The most serious problem with theoretical validity is ignoring problems, data inconsistencies, and study subjects and not explaining why it affects validity.

We used the grounded theory method and in-depth interview method to describe and record the interviewees and encode and decode the interview. To avoid the above-mentioned possibility of affecting the validity of the research, in-depth interviews were audio, video, and verbatim recorded. After the interviews, the audio files and verbatim transcripts were compared and corrected to avoid distortion of interview memory and data caused by time and memory effects. In addition, when reviewing verbatim transcripts of interviews, relevant literature was analyzed, and correlations and comparisons were made. Using the member check method, the interviewees were asked to rate whether the interview content conformed to the original intention and whether the interpretation of the verbatim transcript of the interview deviated or was insufficient. If there were sentences that did not conform to the original meaning, the interviewee was asked to confirm the most correct original meaning to avoid the possibility of inference errors.

In terms of the reliability of qualitative research, Lincoln and Guba (1985) proposed four indicators of reliability, transferability, reliability, and verifiability. Among them, in terms of credibility technology, the credibility of the research was verified through technologies such as long-term investment, continuous observation, and triangular correction (Niu, 2021). The application of triangular correction was used in the in-depth interviews with educators and media workers, as well as the collection and analysis of relevant literature. Therefore, four characteristics of triangular calibration, including multiple data calibration, related literature, analysis of the status quo of aboriginal culture, and the status quo of new media applications were defined by calibrating diverse researchers, researchers, indigenous educators, and media workers. The revision of multiple theories was used in the grounded theory to conduct deduction and reasoning from the preliminary theory to the establishment of the formation theory. Multimethod corrections were used for data collection and analysis. Based on the above discussion, the validity and reliability of this research was improved.

4. Research Results and Analysis

In the research, Nvivo was used for open coding and using verbatim transcripts of interviews with 6 respondents to name nodes by wording and semantics: for example, "Aborigines have a variety of cultures such as language, clothing, rituals, and skills." in "Traditional Culture", "If you don't even agree with tribal rituals, Aboriginal culture is at risk." in "Cultural Revitalization", "The overspeeding power of social media is there for all to see." in "Social Media", and "To let more people understand Aboriginal culture." in "New Media Power". After all open coding was done according to grounded theory, there were a total of 585 nodal sources. The 12 nodes of the decoded category were sorted by conceptual attributes, and the analysis was done by selective decoding. The results of the research were divided into several aspects and were analyzed from the aspects of text lexical analysis, frame matrix analysis, and coding cluster analysis.

4.1. Text lexical analysis

The content of the interview recording was converted into a text file and imported into the computer analysis software Nvivo to start encoding and decoding. In the interview text, the word cloud analysis and the text tree diagram were carried out. Keyword analysis was also carried out on the interview text, as the results were beneficial for researchers to build relationship graphs and association graphs at open coding and concept attribute nodes. Secondly, the statistical results of text coverage, repetition rate, and percentage were analyzed through the text word cloud analysis. Based on this, conceptual attributes were established. After analysis, it was found that words such as culture, new media, tribal group, community, and rights accounted for the largest proportion, and the nodes of their conceptual attributes were established. Then, the text dendrogram was created to analyze the correlation between texts and facilitate more accurate coding. Through the text tree diagram, the traditions, revitalization, technological inheritance, and culture related to aboriginal culture were found with the nodes as conceptual attributes.

4.2. Frame matrix analysis

To interpret data through grounded theory, inductive and deductive reasoning processes were used to compare test hypotheses with theoretical results. To explore the relevance of coding and the connection between coding nodes and cases, we analyzed the number of coded nodes between categories and cases and established a framework matrix through coding nodes. The coding framework matrix table shows that there are 84 cultural revival nodes, 38 cultural value nodes, 36 social media nodes, 36 government aid nodes, 27 aboriginal cultural future nodes, 67 cultural value nodes, 38 nodes of forced assimilation, tribal coding framework 35 nodes of elders, 19 nodes of tribal conflict, 88 nodes of traditional culture, 31 nodes of traditional media, and 73 nodes of new media power. Taking traditional culture, cultural revival and new media power was the maximum value of the first three coding nodes. From this, we learned about the revival of the traditional culture of the aborigines and that the power of new media was a concern among indigenous scholars and media interviewed in depth.

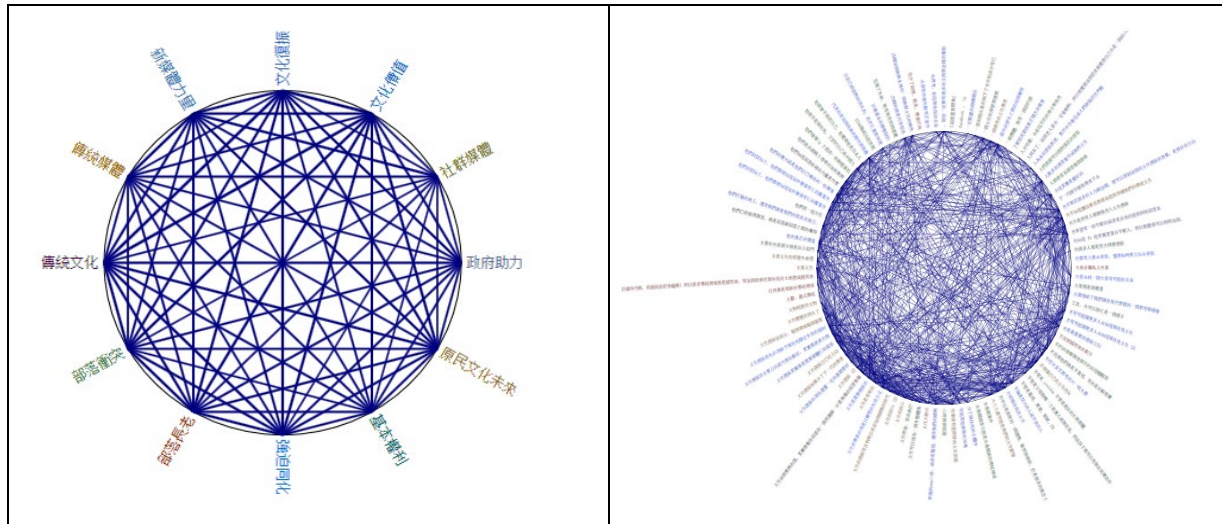
The coding matrix was used to derive the questions of this study. There was inductive and deductive reasoning using grounded theory. There were analyzed for understanding the aboriginal culture and design applications of new media. Due to the importance of traditional culture to aborigines, they were forced to assimilate after being ruled by foreigners, resulting in the loss of basic rights and becoming a vulnerable group. Traditional culture was slowly disappearing. Although there was support from the government and the promotion of Aboriginal TV stations, it still did not stop the trend. The younger generation of aboriginal people has long been ignorant of traditional culture. There also has been the disappearance of tribal culture, which continued to occur in indigenous societies today. The coding results present that traditional culture, cultural revitalization, and basic rights were issues that aboriginal culture are facing. In addition, the application of new media power, social media, and traditional media was also a tool to help the revival of local culture. Based on the above, the question of the research was verified.

4.3. Cluster analysis

This research was based on the analysis of text data. From 585 node sources, 12 node categories were collected, and then through the node content, the dimensions of aboriginal culture and new media applications were sorted out. According to the number of nodes, we extracted cultural revitalization (84), cultural value (38), social media (36), government assistance (36), aboriginal cultural future (27), basic rights (67), forced assimilation (38), tribal elders (35), tribal conflicts (19), traditional culture (88), traditional media (31), and new media power (73). The schematic diagram was exported by NVivo cluster analysis, and the key factor analysis of each category with Pearson correlation coefficient >0.7 was sorted out (Table 3). Through cluster analysis, it was found that the attributes of the aboriginal culture category were related to the attributes of traditional culture and cultural revival, including their related cluster attributes. The other was the clustering attribute of the media application category and the correlation

between new media forces and social media. After the text data was encoded, the classification was established through the concept attributes, and then the cluster analysis was performed for the analysis of the revitalization of aboriginal culture and new media applications. The role of new media in promoting cultural renaissance and aboriginal culture and the aspects of the contribution of new media to the cultural renaissance were discussed based on the result. The positioning and cultural revitalization of aboriginal culture in new media application design were also investigated to find future positioning. Based on this, an analysis of the integration and application of cultural revitalization and new media was drawn.

Table 3. Cluster analysis table



Coding sequence	Category code	Pearson correlation coefficient	Yes or No >0.7
D 1	Cultural revival	0.812568	Yes
D 2	Cultural Value	0.755946	Yes
D 3	Social media	0.745965	Yes
D 4	Government aid	0.744698	Yes
D 5	The Future of Aboriginal Culture	0.702563	Yes
D 6	Basic rights	0.772687	Yes
D 7	Forced assimilation	0.751946	Yes
D 8	Tribal elder	0.735965	Yes
D 9	Racial conflict	0.656954	No
D 10	Traditional Culture	0.824902	Yes
D 11	Traditional media	0.726954	Yes
D 12	New media power	0.781636	Yes

Data source: compiled by researchers.

4.4. Comprehensive analysis

We used in-depth qualitative interviews to gain insight into various cultural aspects of aboriginal people and the current state of new media. After decoding the interview content through the qualitative research software Nvivo, the repeated similarity of related words was summarized in a text word cloud. "Tribal culture" was related to traditional culture, including language, clothing, etiquette, and skills. "New media" referred to social media including Twitter, Facebook, IG, YouTube, and Line. Additionally, coded digits were presented in the coded frame matrix. The correlation between node categories and cases was analyzed. The results show that cultural renaissance, traditional culture, basic rights, new media power, and social media were significantly presented. The respondents believed that the application of aboriginal culture and new media needed to be developed. Then, the cluster analysis result based on the relationship between node categories and cases shows the visual radar distribution map revealing that the revival of traditional culture was not separated from the power of new media. The interviewees also agreed that the cultural renaissance needed the power of new media to be more effectively promoted cultural renaissance.

Based on the above analysis, the gradual extinction of Taiwanese aboriginal culture can be prevented at the following four levels. First, the tribal consensus of tribal elders, leaders, and young people is required for cultural revival, and government assistance is needed for budget support and aboriginal television support. Second, traditional media reports using radio, newspapers, and television are necessary to produce special topics about aboriginal traditional culture to attract public attention. Finally, the power of new media is required for rapid and instant communication through social media. From small groups with mobile phones to mass communication, Internet search portals, electronic news, online animation games, and online electronic magazines are necessary to combine the applicability and convenience of new media. Then, the spirit and meaning of traditional aboriginal culture will be shared through new media networks so that more people can understand the aboriginal culture better. The revival of the culture is not only the responsibility of the aboriginal people but requires the government's budget and the support of the people to preserve and spread the aboriginal culture (Figure 2).

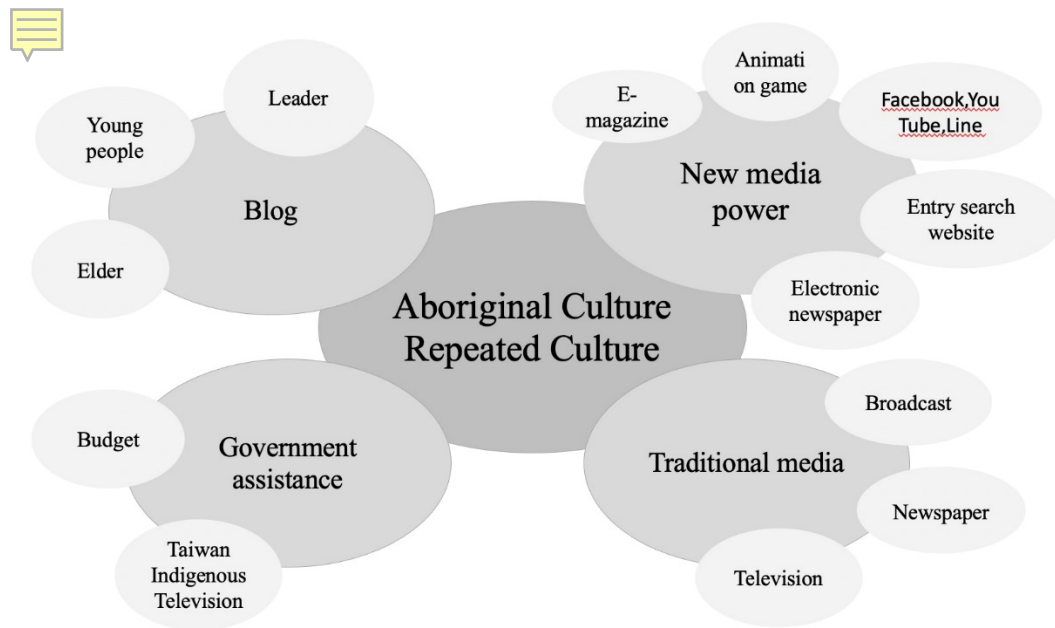


Fig.2. Requirements to revive the aboriginal culture.

5. Conclusions and recommendations

Taiwan's aborigines are divided into 16 ethnic groups. Among them, the population of Amis and Paiwan is more than 100,000, and the population of the rest ethnic groups is less than 100,000. The smallest ethnic group is Kananakafu with 387 people. There is a huge disparity in population among the various ethnic groups. The number of ethnic groups is small, and the strength of cultural inheritance is also naturally weak. On the other hand, the reasons for the weakening of culture are nothing more than the assimilation of mainstream culture, economic pressure, inheritance from generation to generation, clan consensus, and social adaptation. These are the main causes of cultural weakness. There is also a concern of contemporary scholars about aboriginal culture.

The results of the research found that the revitalization of Aboriginal culture was summarized in the following four aspects.

- 1) National self-improvement to enhance national cultural identity and national self-confidence
- 2) Government assistance, intervention, and guidance
- 3) Although traditional media is relatively weak, it still has its role.
- 4) The power of new media: New media is the most convenient and widely used method. There is the cheapest and most efficient way to convey large amounts of information with just a keystroke or a finger press. New media can be used for the revitalization strategy of aboriginal culture and the new media promotion model. After the number of clicks, a certain level of information can be obtained. More readers have the opportunity to click and watch for revitalizing local culture with the help of new media.

From the interview with indigenous scholars and intellectuals, the revitalization of their national culture was confirmed. The "use of new media" was necessary to express the needs of ethnic groups and aspirations for a cultural renaissance. Through

interviews, the use and design of new media were found to have the possibility of revitalizing national culture. Among the four aspects of "aboriginal self-reliance", "government support", "traditional media" and "new media power", "new media power" was the most helpful to the revitalization of aboriginal culture. In fact, due to the development of information media and the popularization of 3C products, the information carriers accumulated by small groups can become multi-directional and extensive cultural communication functions. With the speed of transmission and crossing the barriers of time and space, the convenience of new media can make up for the lack of publicity for disadvantaged Aborigines. After all, the speed and popularity of new media are significantly better than those of traditional media. If it is used properly, there is a great benefit to the revival of aboriginal culture. From this perspective, we found that the integration of new media applications is required in the following aspects.

1) Social media: Facebook, Instagram, YouTube, Line, and Twitter are currently the most suitable cultural communication strategies for aboriginal people with the least amount of time and money. Social media enables the traditional culture and artistic aesthetics, legends, decorations, music, dance, songs, and handicrafts of various ethnic groups to be inherited and effectively let other ethnic groups understand the beauty of aboriginal culture.

2) E-magazine is a flexible electronic medium that incorporates many elements available in digital media such as image and sound. In turn, the popularity of the magazine improves, and the cost is low with the free publication, which is more suitable for the aboriginal people to use this method for cultural promotion. The national culture can be shared through electronic magazines. The more relevant talents are cultivated, the more opportunities to share the culture starting from media editing and dissemination.

3) Game animation is the most acceptable media delivery method for the public. Through animation technology and game design, the public understands the message to be conveyed. Aboriginal groups have colorful festivals. Through the design of game animation, people can be contacted so that they can understand the characteristics of various ethnic groups and achieve the purpose of revitalizing culture. There may be technical issues with game animations such as a requirement for animation production talents of all ethnic groups to enhance the vitality of cultural revival.

4) Search websites can be made to facilitate public search and provide more information about ethnic culture from search sites, and then participate in ethnic activities.

5) Electronic newsletters can be regularly produced to achieve the function of disseminating national culture. As "Aboriginal Television", there are dedicated themes of various ethnic groups in Taiwan. A focused news station produced by Aboriginal culture can be shared so that people who want to know about aboriginal people can learn through "Indigenous TV". The e-newsletters can present in-depth discussions and research on different ethnic groups or different topics for those who want to understand the Aboriginal culture to read at any time.

The benefits of social media are unlimited. There are published images and sounds on media platforms that make good use of the rapid communication capabilities of the Internet. Even for the smallest ethnic group, people who care about aboriginal culture can see the beauty of aboriginal culture and achieve the goal of revitalizing aboriginal culture. The findings of this research suggest that harnessing the power of new media to revitalize Aboriginal culture is the best and the most economical way. To obtain the maximum benefit at the minimum cost, the aborigines need to connect to people through social media to stimulate different levels of thinking on the issue of cultural revival. In terms of cultural inheritance, "talent training" is an issue that all ethnic groups need to pay more attention to. By cultivating national talents, self-cultural identity and cultural revival can be realized by making people understand the aboriginal culture to revive the aboriginal culture.

6. Recommendations for Future Research

We look forward to having more people concerned about the revival of aboriginal culture, making suggestions through relevant channels and achieving cultural revitalization. Based on the above conclusions, the follow-up research recommendations are made.

This research was limited by time, manpower, and financial resources. The number of respondents could not be increased for the 16 aboriginal groups and TV and new media. Therefore, follow-up research needs to have more respondents. Cultural revitalization is successful in several cases but there are also failed cases. Therefore, researchers need to participate in cultural revitalization projects to make relevant data and have a successful experience of cultural revitalization. This can be a great help and encouragement for the revitalization of various ethnic cultures.

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used "conceptualization, Chen Chi-Hsiung and Chin-Yi Ku; methodology, Chin-Yi Ku; software, Chin-Yi Ku; validation, Chin-Yi Ku, and Chen Chi-Hsiung; formal analysis, Chen Chi-Hsiung; investigation, Chin-Yi Ku; resources, Chin-Yi Ku; data curation, Chin-Yi Ku; writing—original draft preparation, Chin-Yi Ku; writing—review and editing, Chin-Yi Ku; visualization, Chin-Yi Ku; supervision, Chen Chi-Hsiung" Authorship must be limited to those who have contributed substantially to the work reported.

Conflicts of Interest: The author contributed to the paper. C.-Y.K. Collects and organizes data and acts, C.-H.C. as the corresponding author .

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