Developing the strategic collaboration model in basic education

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Article Info

ABSTRACT

The strategic collaboration approach has recognized widely can overcome the complexities and challenges of teaching and learning programs and achieve sustainable education quality improvement. This study analyzed the development of a strategic collaboration approach in education at local government in Indonesia. The mixed-method analyzed the correlation of the strategic collaboration approach in education. Data gained through the questionnaire for quantitative data and in-depth interview with the key informants for qualitative data. The school collaboration networks, school strategic leadership, teacher strategic alliances capacity, school culture innovation, and school committee collaboration. Besides, the education service innovation as the core objective of the element education strategic collaboration has determined by two factors consist of school collaborative strategic planning and strategic collaboration development in education. Research samples were teachers, school leaders, and school supervisors and also the personnel of the education agency of Banggai Regency, Central Sulawesi, Indonesia. The research samples selected by using a stratified random sampling technique. There were 521 selected respondents and 15 key informants. The questionnaires for quantitative model are scaled on a 6 point-Likert scale ranged from strongly agree to strongly disagree. The strategic collaboration development model viewed as a better approach to achieve education quality improvement, creating a service innovation, and quality control in education.

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1. INTRODUCTION

Actually, collaboration has been viewed as the core element to achieve more quality service and coherence in the formulation of teaching and learning program in education sectors [1], whether in higher or basic education. Researchers argue that collaboration becomes the core strategy for achieving the highest performance in education service and also for the policy-makers in education sectors. However, obtaining those goals become problematic since the education personnel and policymakers have no real strategic collaboration and capacity for policy implementation. We argue that the strategic collaboration model has been ineffective to formulate and implement, then the negative impact can be seen that the education quality

service and performances have not delivered satisfaction for parents, education stakeholders, and community for all. Actually, there is a lack of study concerning how to make the school strategic collaboration development, school strategic collaboration planning, and building the education service innovation.

As long as the fact suggests that education policy strategy must be formulated more detail, before taking and implementing them in the education sectors, and there are many scholars and education policymakers admitted that the strategic collaborative approach has been widely discussed for the way to break down the education problems based practiced. The strategic collaboration approach determines through the working group or alliance, that involve stakeholders or community groups, share and overcome problems with rigorous teamwork, dynamic interaction, and keep shared rules and norms, handling the issues and decide to formulate the strategic planning with team works [2], [3]. The perspective of education collaboration become more necessary to all policy-makers and education managers to overcome the complexity of education management and school circumstances [4]. In the abundance era, the rise of collaboration and networks become a flatform of digitalization and then the collaboration must be applied in balance science and cross-discipline for effective performance [5]. Strategic collaboration always needs a commitment and share-knowledge to overcome the complexity and challenges in managing public sectors, sustainable changes innovation, and develop the culture of learning innovation [6]. Other scholars claimed that collaboration and networking viewed as the central core element to improve the sustainability change and putting the realistic goals together [7]. It is clear that there is a close relationship between collaboration and networks because as collaboration or team works are presents, networks will be followed for overcome the complexities.

Meanwhile, the strategic leadership in education at least must have four elements capacity that must be performed, for example, ability to school improvement and transformation, effective teaching assessment, creating school innovation, and supporting capacity development for teachers, and effective collaboration planning [8]. The strategic alliances in collaboration are emerged to get unique insights for those who collaborate with each other [9], and also the school strategic leadership will make any creations with them their own skill to become a creative school leader [10].

The capacity of individual or community in making collaboration and synergy are necessary, so they should be enlarged. It revealed that the community collaboration model may significantly impact school improvement and sustainability [11]–[13]. Further, the performance of educational national standards and education quality service have determined by strategic collaboration approach [14]. This research focuses on describe the strategic collaboration development include school collaborative networks, school strategic leadership, teachers' strategic alliances capacity development, collaborative innovation culture in education, and school committee collaboration. The achievement of collaborative strategic development, it should provide collaborative strategic planning as a tool for designing and formulating good education programs and performance, vision, missions, and objective that must be realized to get the end of education management that is education service innovation in education. Based on this theory, we then, formulating the conceptual model that will use in this research presented as shown in Figure 1.

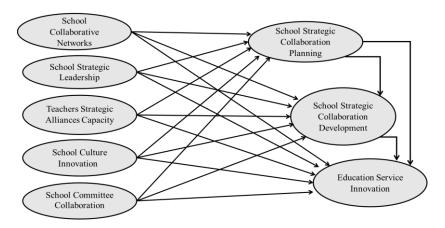Figure 1. The conceptual frameworks of the strategic collaboration development model in education

Based on Figure 1, the core variable of the research shows that the strategic collaboration approach viewed as the strategic ways for the education system in managing education more functional and successful. Strategic collaboration in education and school networks development has developed widely used in the era

of abundance to minimize the complexity issues in public service then it may ensure to overcome such case in the organization [15], developing capability and sustainability [16]. However, the strategic collaboration approach has not studied before in education development and evaluation. Then, to fill this gap, we use this approach to analyze and explore it for evaluating the role of strategic collaboration to the education service innovation development at local government in Indonesia.

2. RESEARCH METHOD
2.1. Research design
This was descriptive survey research that used a combination of quantitative and qualitative research approach to analyze the development of strategic collaboration model for education service innovation. Accordingly, the quantitative method is employed because it has worthiness for the researcher to probe the larger data and collect relevant data for each dimension, then analyze systematically for ease to present [17]. Hence, it is not enough to use a questionnaire only to dig the data. However, we should apply the interview to deeply explore the relevance or necessary information from the context by using qualitative approach.

The researchers used a mixed-method approach in to get more information and answer the research questions to find the improvement for the study design mechanisms [18]. Mixed-method approach was used for several considerations: i) The research problems are complex and researchers need to explore each dimension of strategic collaboration to find plenary data and triangulated information; ii) To analyze strategic collaboration approach from different kind of respondents and informants in education to get the comprehensive understanding in developing education service innovation and evaluation of the basic education development; iii) The approach give the researchers a wide range to learn and explore the respondents' perception in the complex adaptive phenomena of education service innovation through strategic collaboration development model.

2.2. Population
This study has targeted a population of school leaders, teachers, and school supervisors for primary and secondary school at the Banggai Regency, Central Sulawesi, Indonesia. The data gained from the Education Agency of Banggai Regency. The population consisted of 6,376 people from both primary and secondary school leaders and teachers in Banggai Regency, Central Sulawesi Province [19].

2.3. Sample and procedure of sampling
The sample consisted of 551 people from primary and secondary school, school supervisors, and education agency personnel in Banggai Regency. In selecting the sample, we applied stratified random sampling classifies into three demography characteristics of the sample from the gender, age, and level of formal education of sample. Furthermore, for the qualitative data, the researchers involved 15 participants who will have sampled purposively for an in-depth interview with a key informant. The research conducted from January–August, 2020. However, because of the COVID-19 pandemic disease, the research data has been late to be returned to researcher and also to triangulation data research for qualitative data must be followed the health protocols. In collecting the qualitative data, the researcher made an appointment and the interview was taken by direct calling through handphone and WhatsApp media online. The data gained completely for qualitative, however, for the questionnaires as the quantitative research data, there are 20 questionnaires that did not return, and the 10 items has broken and they could not be read. Then, total questionnaire had received by researchers was only 521 to analyze forward in this research.

2.4. Research instruments
The research instruments have designed to distribute to the respondents for quantitative data and analyze descriptive statistics such as means and standards deviations, and for inferential statistics involved Independents Samples for the parametric test by using ANOVA and SPSS Software version 24 is applied to analyze each variable. The validity and reliability analyzed through Cronbach Alpha (α). In the next stage, the researchers used interview guidelines consist of five qualitative instruments data with seven research questions that analyzed using the spiral model [20]. According to the literature of strategic collaboration, there are five dimensions used in developing the strategic collaboration model in basic education as core dimensions of basic education development. However, the education service innovation as the objective of strategic collaboration development predicts on school strategic collaboration planning, and school strategic collaboration development. Here, we argue that the individual or groups of school personnel ease to motivate since they work in teams or synergize to work in teams.

The research instrument design based on the theory of strategic collaboration and each dimension analyzed as i) School collaborative networks: It means that the school as an open system propose to make partnership with another school and building partnership with community and all stakeholders to achieve the

school development [21], [22]. School collaborative networks involve school collaboration in learning and teaching, group of studying, shared school problems, school leaders' collaboration, and school team-works; ii) School strategic leadership: The strategic leadership in school is the capability of school leaders to develop the directions of school through strategic collaboration in managing school and school administrative process and it is important to make the school reform for better school performance and developing school administrative personnel [23], [24]. For this research, there are five indicators identify for measuring it, such as school leaders' commitment for vision, mission and objectives, discipline and motivation, school management innovation and controlling, and become agent of school change and development; iii) Teachers' strategic alliances capacity: It refers to the teachers ability and willingness to working together with another teacher in school and teachers from other schools [25], [26]. There are four indicators use to measure, as: collaborative working groups, teachers' joint meeting regularly, teachers' face-to face dialogue, and working with harmonization and cooperatively; iv) School culture innovation development: Innovation is a necessary term in the abundance era for developing the school digitalization paradigm.

School culture innovation refers to the school activities in building the familiarity to make a new strategy or approach through technology acceptance and ability to make the learning and teaching culture become attractive, efficient, and effective. [27], [28]. There are four indicators to use for measuring it, such as teachers' innovation and professionality, school personnel innovation programs, aware of leading school innovation, and constructivism behavior using technology in learning and teaching; v) School committee collaboration development: The school committee play an important role to be a mediating agency and supporting the school development and change. the school committee collaboration development means the whole efforts of school committee and community groups to collaborate with school personnel and facilitating the school strategic management to be better achieving the school strategic planning and performance in education [29]. There are four dimensions are used to measure such as; school committee supporting programs, school committee availability and collaboration, developing school sustainability, and school committee dedication and commitment in building education quality improvement.

Accordingly, there are three variables use to be the expected goals of strategic collaboration development involve is education service innovation. According to the literature, the better strategic collaboration planning and programs development, the greater education service innovation will achieve. The education management needs a service design and service innovation for sustainability, however these objectives sometimes to be neglected [30]. In this study, the education service innovation refers to the collaborative strategic efforts of education personnel to develop a new strategy to design and formulate a service innovation in school activities by using technology called educational digitalization policy.

Then, there are five indicators to measure it such as; innovation practice-based technology digitalization, priority on quality service, innovative program in teaching and learning, and self-ability of school personnel. However, developing the education service innovation is not an easy case, but it can be determined by two dimension or factors: i) School strategic collaboration planning refers to the capacity of school to make a strategic planning collaboratively with all of the school personnel to design roadmap, and operational procedure of innovation in education; ii) School strategic collaboration development. Although the school has provided the school planning, but it must be followed by the school strategic collaboration development [31], [32]. It refers to the school personnel collaboration activities to leading school collaborative networks, deliberative learning development, and development of school administration process and teaching activities [33], [34].

Based on the description, the researchers design questionnaires consisted of 35 items and measuring validity and reliability test. The research instruments have validated by the authors team, and cross-check the correctness of the research data to avoid bias in taking the research conclusion. The research instrument includes dimensions and indicators of strategic collaboration in education will describe in the Table 1.

2.5. Data analysis

For data analyzed, SPSS software is used to analyze the quantitative data. The researchers at the beginning will analyze the quantitative data. The researchers will analyze firstly the qualitative data through research questions. The researchers applied Excel and SPPS software to measure the descriptive statistic and inferential. The SPPS software used because it has easy and powerful to operate in data analyzed and suitable with the focus of research to measure skill and behavior or perceptions for research respondents [35].

The quantitative data will be analyzed in the first stage to measure the validity and reliability data, and then the valid and reliable instrument will distribute to respondents. The research data then analyze to test the central tendency (means and standards deviation), and the ANOVA test. Further, the researchers have to cross-check and triangulate to fulfil the credibility data of quantitative research data.

Table 1. The research quantitative data for each dimension and indicator (Likert scale 1-6 point)

Dimensions	Code	Items
School collaborative networks	SCN1	The teaching and learning process are discussed and design through collaboration with another school for developing capacity.
	SCN2	The school personnel are committed to making programs in a group of studies and lined with university students in the education science department.
	SCN3	The issues and complexities are faced will be discussed share-problem with other schools or university to get the bright resolutions of education quality development.
	SCN4	The school leader's capacity developed through formal group conducted collaboration development with others.
	SCN5	All school leaders and teachers have the same venue to make a roadmap of education to overcome the complexity and building capacity regularly through similar perceptions, commitment, responsibility, and mutual trust.
School strategic leadership	SSL1	The school leaders commit to pursuing the school vision, missions, and objectives for school quality improvement.
	SSL2	The school leaders perform discipline and motivators for teachers and doing assessment regularly.
	SSL3	The school leaders lead the school management innovatively.
	SSL4	The school leaders focus to be the agent of change for development and achieve the quality service improvement and learning quality in school.
Teacher strategic alliances capacity	TSAC1	Teachers always motivate to accomplish the task through collaborative teams.
	TSAC2	Teachers are aware to make a meeting every week to evaluate their performance in the teaching process.
	TSAC3	The teachers make the planning for collaboration in developing their capacity and face-to-face dialogue at the same time and venue.
	TSAC4	Teachers are motivated to live harmonization and cooperative with others in primary and secondary school collaboration and higher school for capacity development.
School culture innovation development	SCID1	The school human resources support professional innovation in work completion.
	SCID2	School leaders and teachers realize to bring an innovative program for students' achievement.
	SCID3	School leaders and teachers are aware of discipline and motivation for leading the school innovatively.
	SCID4	The school are conceptualized as the constructivist behaviors and attitude for targets groups (students) aptitude and characters.
School committee collaboration development	SCCD1	The school committee support professionally the school administration process and teaching and learning programs.
	SCCD2	The school committee become availability for developing values and teaching programs.
	SCCD3	The school committee has to develop the sustainability effort to benefit school change and does not interfere with the school administration.
	SCCD4	The school committee gives dedication and maintains a good and healthy relationship with the school (school leaders and teachers) for developing school improvement and quality performance in learning and teaching.
School strategic collaboration planning	SCSP1	All school programs organized with a strategic planning task force together with the school team.
	SCSP2	All programs of teaching and learning discussed collaboratively with all teachers and supported each other.
	SCSP3	The school programs are designed based on real facts, valid, recognized with the school team, parents, and community groups, and also school committee.
	SCSP4	The school planning is strict to the issues and learning service based on school vision, missions, and objectives.
	SCSP5	The school financial resources are planned with all school parties and the community.
School strategic collaboration development	SSCD1	The school teamwork has a good intention to make a change in education improvement and service innovation.
	SSCD2	The teamwork has similar objectives to develop capacity in managing education.
	SSCD3	The school leaders, teachers, and stakeholders in education make teamwork to accomplished the tasks together with strategic action in a group to make the appropriate change and developing education outputs for target groups in innovation and competition.
	SSCD4	The school leaders develop capacity in collaboration and strategic planning.
	SSCD5	The school leaders and teachers synergize and consistent to diminish complexity and education quality improvement.
Education service innovation	ESI1	Education performs innovation practiced.
	ESI2	Quality services in education are priority.
	ESI3	The innovation in education service for primary and secondary school improve the quality of works.
	ESI4	All school human resource is the self-ability to build innovative works and professional in delivering the task.

Note: 1=Strongly disagree; 2=Disagree; 3=Undecided; 4=Enough; 5=Agree; 6=Strongly agree

3. RESULTS AND DISCUSSION

The research found that all of the dimensions of the strategic collaboration development model (SCDM) consist of eight dimensions namely, school collaborative networks (SCN), school strategic leadership (SSL), teachers strategic alliances capacity (TSAC), school culture innovation development (SCID), school committee collaboration development (SCCD), school strategic collaboration development

(SSCD), school strategic collaboration planning (SSCP), and education service innovation (ESI) indicate possessing the mean values are between 3.0 and 4.0 in the ranged of respondents' perceptions have higher perceptions for each variable, for example, strategic collaboration in education approach find minimum value 2.0 and the maximum value is 6 point, meanwhile, only one variable has been getting 1 point. Further, we will describe for each indicator of variables both quantitative and qualitative data based on the research questions. Table 2 shows the descriptive statistics based on respondents' perceptions.

Table 2 shows the summary of descriptive statistics informs that the school strategic leadership has the highest means values (4.25) and the standard deviation value is 1.01, meanwhile the lowest values of means is that school collaborative networks (3.76) with standard deviation values is 0.99. Then, in developing the model of strategic collaboration model in education, the school collaborative networks, and the school strategic collaboration planning must be provided to be higher by school personnel and a local government of Banggai Regency, Central Sulawesi Province. Furthermore, based on the results analysis through SPSS windows version 24 shows each indicator of strategic collaboration model provides in Table 3.

Table 2. Summary of descriptive statistics based on respondents' perceptions (N=521)

Variables	Min.	Max.	Mean	Std. Deviations
School collaborative networks (SCN)	2	6	3.76	0.99
School strategic leadership (SSL)	2	6	4.25	1.01
Teachers' strategic alliances capacity (TSAC)	2	6	4.17	0.99
School culture innovation development (SCID)	1	6	3.95	1.16
School committee collaboration development (SCCD)	2	6	4.21	0.95
School strategic collaboration planning (SSCP)	2	6	3.82	0.91
School strategic collaboration development (SSCD)	2	6	3.86	0.92
Education service innovation (ESI)	2	6	4.14	0.97

Source: Primary data analysis (2021)

Table 3. Descriptive statistics analysis for each indicator

Dimensions	Code	N	Mean	Std. Deviation	Validity	Cronbach Alpha (α)	KMO-Barlets test
School collaboration networks (SCN)	SCN1	521	3.5816	1.39421	0.471	0.922	0.544
	SCN2	521	3.7121	1.30297	0.541	0.921	0.698
	SCN3	521	3.7946	1.29572	0.510	0.922	0.730
	SCN4	521	3.7985	1.38802	0.535	0.921	0.528
	SCN5	521	3.8848	1.40814	0.541	0.921	0.477
School strategic leadership (SSL)	SSL1	521	4.1113	1.20379	0.491	0.922	0.587
	SSL2	521	4.0960	1.23973	0.575	0.921	0.588
	SSL3	521	4.1574	1.33091	0.521	0.922	0.692
	SSL4	521	4.2591	1.20098	0.518	0.922	0.592
Teachers' strategic alliances capacity (TSAC)	TSAC1	521	4.1939	1.26599	0.497	0.922	0.681
	TSAC2	521	4.0557	1.20686	0.497	0.922	0.683
	TSAC3	521	4.1152	1.17268	0.502	0.922	0.650
	TSAC4	521	3.9750	1.28353	0.478	0.922	0.634
School culture innovation development (SCID)	SCID1	521	3.7486	1.28756	0.496	0.922	0.682
	SCID2	521	3.7946	1.30017	0.547	0.921	0.745
	SCID3	521	3.9655	1.35404	0.555	0.921	0.702
	SCID4	521	3.9060	1.31879	0.562	0.921	0.718
School committee collaboration development (SCCD)	SCCD1	521	4.0653	1.16502	0.324	0.924	0.590
	SCCD2	521	4.1670	1.14562	0.326	0.924	0.679
	SCCD3	521	4.0864	1.14951	0.421	0.923	0.621
	SCCD4	521	4.1631	1.19061	0.392	0.923	0.703
School collaborative strategic planning (SCSP)	SSCD5	521	4.0518	1.30207	0.472	0.922	0.830
	SCSP1	521	3.8138	1.43777	0.445	0.923	0.936
	SCSP2	521	3.8061	1.30194	0.515	0.922	0.921
	SCSP3	521	3.5144	1.26654	0.674	0.920	0.744
	SCSP4	521	3.6929	1.40525	0.571	0.921	0.814
	SCSP5	521	3.9712	1.32764	0.537	0.921	0.832
School strategic collaboration development (SSCD)	SSCD1	521	3.9866	1.38738	0.349	0.924	0.933
	SSCD2	521	3.9309	1.27966	0.434	0.923	0.909
	SSCD3	521	3.5931	1.24014	0.650	0.920	0.725
	SSCD4	521	3.8138	1.37207	0.517	0.922	0.804
Education service innovation (ESI)	ESI1	521	4.1113	1.14652	0.419	0.923	0.686
	ESI2	521	4.1113	1.08446	0.374	0.923	0.623
	ESI3	521	4.0345	1.15474	0.379	0.923	0.655
	ESI4	521	4.0019	1.24576	0.408	0.923	0.642

Note: Average grand mean=3.944; SD=1.273

Table 3 shows that the average of Average Grand Mean is 3.944 and the range of mean value was ≥3 or 4. The results indicate that the respondents including school leaders, teachers, and school supervisors expect that strategic collaborative development model and all variables have strongly correlated with quality improvement and education services. The ANOVA with Tukey's Test for No additivity results show that there is a significant value with $\alpha=0.000$, the sum of square value=8274.051, df=520, means square=15.912, and $F_{count}=15.646$ in the significant level $\alpha=0.05$, and the grand mean was achieved=3.9447. The summary of ANOVA Test is shown in Table 4.

The result of research in Table 4 has consistency with the theory of strategic collaboration describe that basically this approach may use to all level of the domain of the public sector to diminish the complexity through the actors' motivation and intentional to break the complex problems and getting the sustainability change for innovation [13], [36]. The results also showed each dimension have a mean value was above 3 (≥3.00), and Tukey's estimate of power to which observations achieve=3.497. This result confirms that all respondents (N=521) are agree to eight dimensions as the core elements in the strategic collaborations development model in education. Further, in order to conform the quantitative results, we make the interviews with the key informants' perception concerning the model of strategic collaboration development in education.

Table 4. ANOVA with Tukey's test for no additivity results

			Sum of squares	df	Mean square	F	Significance (0.05)
Between people			8274.051	520	15.912		
Within people	Between items		642.851	34	18.907	15.646	0.000
	Residual	No additivity	116.885[a]	1	116.885	97.249	0.000
		Balance	21248.493	17679	1.202		
		Total	21365.377	17680	1.208		
	Total		22008.229	17714	1.242		
Total			30282.279	18234	1.661		

Grand Mean=3.9447; Tukey's estimate of power to which observations must be raised to achieve additivity=3.497

The first question of research is aimed to know the key informants' perceptions concerning to the role of collaborative networks relate to the strategic collaboration development, school strategic collaboration planning and building the education service innovation in basic education at Banggai Regency, Central Sulawesi Province. The results of interview from key informants such information as:

> *"The collaborative networks have become a better strategy to develop the school outcome, and the school collaborative networks may improve the education service quality development."* (Participant A)
> *"It must be developed to mediate the achievement of education performance and creating the education service innovation."* (Participant B)

Then, there is a key role of school collaboration network to be provided by developing collaboration networks. This argument gathers from participant' statement as:

> *"The school collaboration networks must be developed because it has an important role to make controlling and evaluating the advantages and disadvantages of the education programs in school."* (Participant C)

These participants agree and believe that there is a strong relationship between school collaboration networks with school strategic collaboration development, school strategic collaborative planning and education service innovation. The results relate to another previous research found that rise of networking for collaboration viewed as the strategy to get an effective program and innovation [37]. The role of collaboration networks will affect the improvement of science and technology in managing the education sector as one of the public sector domains [38], collaborative network may endure the era of digitalization and networks [39]. Overall, the results of this research showed that there was consistent research finding between quantitative and qualitative data, and these results may come to the proposition describe as: "The better policy implementation of school collaborative networks based on the school strategic collaboration planning and school strategic collaboration development; the greater education service innovation will be achieved effectively."

The second research question focus on to explore how the role of school strategic leadership in term of achieving education service innovation. The results of interview by researchers as:

"Strategic leadership activities have emerged in school involved designing school annually program by using strategic planning, design program and activity collaboratively and share-problems to all of the teachers." (Participant D)

"There are no important elements in school management, except the school leaders. The school leaders should become a man who has vision and mission for education improvement, thinking again and become the agent of change, active in collaboration to design school planning." (Participant E)

Further, in the term of function of school leadership it has played a key driver in making school collaboration succeed. According to one of school committee member states as:

"The school strategic leadership has become the agent of leading school innovation. school strategic leadership should prioritize thinking strategically." (Participant F)

"The school strategic leadership has an impact to better perform innovation service and the output or outcomes such students will increase their capabilities and competencies of school personnel." (Participant G)

The results of this study have also related to the argumentation of scholars that eventually the strategic leadership in education is rapidly challenged and asked the school leaders to concern and undertake to encounter the external and internal change for innovation of education caused by the tensions of external expectation and internal school priorities [8], [40], [41]. In the context of creating the school innovation and quality service in education, then school leaders should be performed strategically through collaboration to overcome complexities and decision making in schools [42], [43]. Based on the results and descriptions, we propose the second preposition as: "The more success of school leaders performed the strategic leadership style in school based on the school strategic collaboration planning and strategic collaboration development, the greater education service innovation will achieve effectively."

The third question is focusing on the teachers intend to involve in partnership in the strategic collaboration in basic education. It can get this information from participant's argument states that:

"We need to tell that the key driver to perform teaching and learning in the classroom or online because of COVID-19 pandemic. The teacher's alliance must be empowering and provide them whether in face-to-face meeting or via Zoom. Teachers' alliances and partnership are the core strategy to perform teachers' capacity development." (Participant H)

"As a matter of fact, the teachers' alliances through network collaboration or face-to-face discussion have closely improvement for the education service innovation." (Participant I)

After doing the in-depth interview with several participants, we argue that all the results consistent with the quantitative and qualitative results finding. The results were supported by another research that collaborative learning practices or teachers' alliances may overcome the learning and teaching problems and give a best practice to students in performing the learning outputs [44], [45], and the collaborative learning both teachers and students will have worthiness to creating the more pedagogy competence [46], [47]. Further, we propose the third proposition as: "The effectiveness of teachers' strategic alliance capacity based on school strategic collaboration planning and school strategic collaboration development; the greater education service innovation will be achieved."

In the fourth question of research purposes to know the association of school culture innovation in developing the school strategic collaboration, collaboration planning and education service innovation. The researchers conducted in-depth interview with several key informants. For example, the supervisor of primary school reveals as:

"The school culture innovations capacity viewed as the one side of performing the innovation in education service. There is no single school can create the innovation culture without the supporting from school team. The school culture innovation needs to perform collaborative networks and strategic collaboration in school." (Participant J)

"School innovation culture become increasingly demand because it provide the teamwork, collaboration, responsibility, commitment, and strategic planning in which discussed and implement by using strategic collaboration in school." (Participant K)

This finding of research has relationship with the previous empirical research stated that in the way to create the cultural innovation change in school, it must be strengthening education through collaborative

networks, strategic collaboration development, and school strategic leadership for empowerment school culture may improve the education management and students' competitiveness [48], [49]. Based on the elaboration, the we propose the fourth proposition describe as: "The better creating the school culture innovation based on the school strategic collaboration planning and school strategic collaboration development, the greater education service innovation will be performed effectively."

In the fifth question aims to describe the association of school committee collaboration in the strategic collaboration model for creating the education service innovation. The results of in-depth interview with key informants from Education Institution Personnel argue that:

> "The school committee have some important role to create the innovation in education service, and mediate the local government to overcome the school problems, share-knowledge, the supporting agent to realize the school programs, and creating the sustainability of school change." (Participant L)
> "Developing the positive role of school committee is very crucial to be developed to ensure their perception and commitment to help school development." (Participant M)
> "School committee collaborative capacity may have close relationship with the school strategic collaboration in development, strategic planning for the school change, and responsibility." (Participant N)

This result has supported by the empirical research that school collaboration development must be involved the school committee, the parents, and community groups [50]. The effectiveness of collaboration in school must be enhanced by group of community, the mutual support, trust, and commitment between group of communities [51]. The efforts to develop capacity of school committee it must conceptualization based on the school strategic planning and strategic collaboration for sustainability [52]. The fifth preposition used in this research as: "The better school committee collaboration to be implemented through school strategic collaboration planning and school strategic collaboration development, the greater education service innovation will achieve successfully."

Based on the whole discussions, we recommend that there are there are five aspects of strategic collaboration model development involve: school collaborative networks, school strategic leadership, teachers' strategic alliances capacity development, school culture innovation development, and the school committee collaboration development. In order to build the highest performance in education service and quality, those aspects have significant associate in developing the school strategic collaboration planning, school strategic collaboration development, and the education service innovation.

4. CONCLUSION

The study revealed that school leaders and teachers play an important role to implement the strategic collaboration development model to provide better education service innovation and education quality. The education institution and education supervisor need to provide a real action to formulate the local education regulation and give chance to stakeholder to take responsibility and provide synergy of the whole parties in developing basic education service innovation. This study proved the SCDM becomes a strategy to increase quality improvement and innovative service education. The quantitative and qualitative analysis revealed that there is no different perception concerning the whole dimensions and indicators of the SCDM approach for creating service innovation in basic education. All respondents and key informants give their perception that SCDM has a positive impact on education service innovation. The SCDM involves several elements such as school collaborative networks, school strategic leadership, teachers' strategic alliances capacity, school culture innovation development, school committee collaboration development, school strategic collaboration development, school strategic collaboration planning, and education service innovation.

The school leaders and teacher may use this strategic collaboration model in maintaining education quality in the next future. The SCDM become a new approach for the local government and Education Agency for getting the sustainability innovation in education. It triggers the education service innovation development and obtain the education quality at local government in Indonesia for the next future.

For future research, we suggest that there is a challenge and interesting to conduct the similar research development of theory of strategic collaboration to another public service domain and policy research. It is attractive to advice that the others study may use a single approach whether a qualitative or quantitative methods with a broader of respondents and involving the field of research. Due to the research was conducted in the COVID-19, the space and time to meet face to face dialogue with key informants have limitation for getting deeply information and make an appointment to interview. It is necessary to add the research location and the total of research respondent more than this research. It is also suggested to add dimensions and indicators for the further research.

REFERENCES

[1]   C. Newell and A. Bain, *Team-Based Collaboration in Higher Education Learning and Teaching*. Singapore: Springer Singapore, 2018.

[2]   D. Norris-Tirrell, "Introduction: Assessing Multiple Dimensions Of Collaboration," *Journal of Health and Human Services Administration*, vol. 35, no. 1, pp. 4–10, Feb. 2012.

[3]   J. Tham, A. H. Duin, S. (Chakrika) Veeramoothoo, and B. J. Fuglsby, "Connectivism for writing pedagogy: Strategic networked approaches to promote international collaborations and intercultural learning," *Computers and Composition*, vol. 60, p. 102643, Jun. 2021, doi: 10.1016/j.compcom.2021.102643.

[4]   S. Braye, T. Marrable, and M. P. Shoot, "Building Collaborative Capacity for Using and Evaluating the Impact of E-learning in Social Work Education: The Case of Law," *Social Work Education*, vol. 33, no. 6, pp. 835–853, Aug. 2014, doi: 10.1080/02615479.2013.866643.

[5]   J. Adams, "The fourth age of research," *Nature*, vol. 497, no. 7451, pp. 557–560, May 2013, doi: 10.1038/497557a.

[6]   S. L. Oliver and E. Hyun, "Comprehensive curriculum reform in higher education: collaborative engagement of faculty and administrators," *Journal of Case Studies in Education*, vol. 2, p. 20, Jul. 2011.

[7]   D. Muijs, M. Ainscow, C. Chapman, and M. West, *Collaboration and Networking in Education*. Dordrecht: Springer Netherlands, 2011.

[8]   W. de Jong, D. Lockhorst, R. de Kleijn, M. Noordegraaf, and J. van Tartwijk, "Leadership practices in collaborative innovation: A study among Dutch school principals," *Educational Management Administration & Leadership*, pp. 1–17, Oct. 2020, doi: 10.1177/1741143220962098.

[9]   D. Mamédio, C. Rocha, D. Szczepanik, and H. Kato, "Strategic alliances and dynamic capabilities: a systematic review," *Journal of Strategy and Management*, vol. 12, no. 1, pp. 83–102, Feb. 2019, doi: 10.1108/JSMA-08-2018-0089.

[10] A. Sales, L. Moliner, and A. Francisco Amat, "Collaborative professional development for distributed teacher leadership towards school change," *School Leadership & Management*, vol. 37, no. 3, pp. 254–266, May 2017, doi: 10.1080/13632434.2016.1209176.

[11] N. Lingam and G. I. Lingam, "Strengthening Collaboration with the Community for Sustainable Development: Implications for School Leadership," in *Leadership, Community Partnerships and Schools in the Pacific Islands*, Singapore: Springer Singapore, 2020, pp. 165–178.

[12] E. Perrault, R. McClelland, C. Austin, and J. Sieppert, "Working Together in Collaborations: Successful Process Factors for Community Collaboration," *Administration in Social Work*, vol. 35, no. 3, pp. 282–298, Jun. 2011, doi: 10.1080/03643107.2011.575343.

[13] M. E. Brown, T. Rizzuto, and P. Singh, "Strategic compatibility, collaboration and collective impact for community change," *Leadership & Organization Development Journal*, vol. 40, no. 4, pp. 421–434, Jun. 2019, doi: 10.1108/LODJ-05-2018-0180.

[14] M. H. Tahili, I. Tolla, M. A. Ahmad, A. Saman, and S. Samad, "The Effect of Strategic Collaboration Approach on the National Educational Standards Achievement and Service Quality in Basic Education at Local Government in Indonesia," *Research in Social Sciences and Technology*, vol. 6, no. 1, pp. 53–82, May 2021, doi: 10.46303/ressat.2021.4.

[15] R. H. DeHoog, "Collaborations and Partnerships across Sectors: Preparing the Next Generation for Governance," *Journal of Public Affairs Education*, vol. 21, no. 3, pp. 401–416, Sep. 2015, doi: 10.1080/15236803.2015.12002206.

[16] F. S. Batarseh, J. M. Usher, and J. J. Daspit, "Collaboration Capability In Virtual Teams: Examining The Influence On Diversity And Innovation," *International Journal of Innovation Management*, vol. 21, no. 04, p. 1750034, May 2017, doi: 10.1142/S1363919617500347.

[17] P. Leavy, *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*, 1st ed. New York, USA: Guilford Press, 2017.

[18] J. Schoonenboom and R. B. Johnson, "How to Construct a Mixed Methods Research Design," *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, vol. 69, no. 2, pp. 107–131, 2017, doi: 10.1007/s11577-017-0454-1.

[19] e-SAKIP Kabupaten Banggai, "e-Performance Accountability System of Government Institution: Education Institution (In Bahasa)," Education Authorities of Kebumen district, 2021.

[20] J. W. Creswell, *Research design : qualitative, quantitative, and mixed methods approaches*, 4th ed. Thousand Oaks, California: SAGE Publications, 2014.

[21] J. Díaz-Gibson, M. C. Zaragoza, A. J. Daly, J. L. Mayayo, and J. R. Romaní, "Networked leadership in Educational Collaborative Networks," *Educational Management Administration & Leadership*, vol. 45, no. 6, pp. 1040–1059, Nov. 2017, doi: 10.1177/1741143216628532.

[22] A. F. Akinyemi, S. Rembe, J. Shumba, and T. M. Adewumi, "Collaboration and mutual support as processes established by communities of practice to improve continuing professional teachers' development in high schools," *Cogent Education*, vol. 6, no. 1, p. 1685446, Jan. 2019, doi: 10.1080/2331186X.2019.1685446.

[23] S. N. Ismail, A. G. Kanesan, and F. Muhammad, "Teacher Collaboration as a Mediator for Strategic Leadership and Teaching Quality," *International Journal of Instruction*, vol. 11, no. 4, pp. 485–498, Oct. 2018, doi: 10.12973/iji.2018.11430a.

[24] T. Prasertcharoensuk and K. N. Tang, "The effect of strategic leadership factors of administrators on school effectiveness under the Office of Maha Sarakham Primary Educational Service Area 3," *Kasetsart Journal of Social Sciences*, vol. 38, no. 3, pp. 316–323, Sep. 2017, doi: 10.1016/j.kjss.2016.09.001.

[25] Ö. Çoban and R. Atasoy, "Relationship between distributed leadership, teacher collaboration and organizational innovativeness," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 9, no. 4, p. 903, Dec. 2020, doi: 10.11591/ijere.v9i4.20679.

[26] K. Vangrieken, F. Dochy, E. Raes, and E. Kyndt, "Teacher collaboration: A systematic review," *Educational Research Review*, vol. 15, pp. 17–40, Jun. 2015, doi: 10.1016/j.edurev.2015.04.002.

[27] I. N. Dubina and E. G. Carayannis, *Creativity, Innovation, and Entrepreneurship Across Cultures*. New York, NY: Springer New York, 2016.

[28] B. Balkar, "Defining an empowering school culture (ESC): Teacher perceptions," *Issues in Educational Research*, vol. 25, no. 3, 2015.

[29] R. Carroll and S. Keown, "Creating a Community of Caring within a School," *International Electronic Journal of Elementary Education*, vol. 12, no. 4, pp. 401–404, Mar. 2020, doi: 10.26822/iejee.2020459469.

[30] M. Carvalho, I. Cabral, J. L. C. Verdasca, and J. M. Alves, "What about us? Teachers' participation in schools' strategic action plans," *Participatory Educational Research*, vol. 8, no. 3, pp. 156–175, Aug. 2021, doi: 10.17275/per.21.59.8.3.

[31] P. M. Andreoli, H. W. Klar, K. S. Huggins, and F. C. Buskey, "Learning to lead school improvement: An analysis of rural school leadership development," *Journal of Educational Change*, vol. 21, no. 4, pp. 517–542, Nov. 2020, doi: 10.1007/s10833-019-09357-z.

[32] M. Hadfield and M. Ainscow, "Inside a self-improving school system: Collaboration, competition and transition," *Journal of Educational Change*, vol. 19, no. 4, pp. 441–462, Nov. 2018, doi: 10.1007/s10833-018-9330-7.

[33] S. Rincon-Gallardo, "Leading school networks to liberate learning: three leadership roles," *School Leadership & Management*, vol. 40, no. 2–3, pp. 146–162, May 2020, doi: 10.1080/13632434.2019.1702015.

[34] M. F. M. Yaakob, M. R. Musa, A. Habibi, and R. Othman, "Strategic Management and Strategic Planning in School: Is it worth for Teachers?" *Academy of Strategic Management Journal*, vol. 18, no. 3, 2019.

[35] C. Ozgur, M. Kleckner, and Y. Li, "Selection of Statistical Software for Solving Big Data Problems," *SAGE Open*, vol. 5, no. 2, pp. 1–12, Apr. 2015, doi: 10.1177/2158244015584379.

[36] M. Howard, H. K. Steensma, M. Lyles, and C. Dhanaraj, "Learning to collaborate through collaboration: How allying with expert firms influences collaborative innovation within novice firms," *Strategic Management Journal*, vol. 37, no. 10, pp. 2092–2103, Oct. 2016, doi: 10.1002/smj.2424.

[37] Y. Weinberger and M. Shonfeld, "Students' willingness to practice collaborative learning," *Teaching Education*, vol. 31, no. 2, pp. 127–143, Apr. 2020, doi: 10.1080/10476210.2018.1508280.

[38] G. Duffy and T. Gallagher, "Shared Education in contested spaces: How collaborative networks improve communities and schools," *Journal of Educational Change*, vol. 18, no. 1, pp. 107–134, Feb. 2017, doi: 10.1007/s10833-016-9279-3.

[39] C. Moser, P. Groenewegen, and J. E. Ferguson, "Meaning in Organizational Networks – from Social to Digital and Back," in *Structure, Content and Meaning of Organizational Networks*, vol. 53, Emerald Publishing Limited, 2017, pp. 211–229.

[40] F. Mbugua and J. F. A. Rarieya, "Collaborative strategic planning," *Educational Management Administration & Leadership*, vol. 42, no. 1, pp. 99–111, Jan. 2014, doi: 10.1177/1741143213499258.

[41] C. W. Chan, "Leading today's kindergartens," *Educational Management Administration & Leadership*, vol. 46, no. 4, pp. 679–691, Jul. 2018, doi: 10.1177/1741143217694892.

[42] K. Schildkamp, C. L. Poortman, J. Ebbeler, and J. M. Pieters, "How school leaders can build effective data teams: Five building blocks for a new wave of data-informed decision making," *Journal of Educational Change*, vol. 20, no. 3, pp. 283–325, Aug. 2019, doi: 10.1007/s10833-019-09345-3.

[43] S. Fitriani, Istaryatiningtias, and L. Qodariah, "A child-friendly school: How the school implements the model," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 1, pp. 273–284, 2021, doi: 10.11591/ijere.v10i1.20765.

[44] M. Z. Haron, M. M. M. Zalli, M. K. Othman, and M. I. Awang, "Examining the teachers' pedagogical knowledge and learning facilities towards teaching quality," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 1, p. 1, Mar. 2021, doi: 10.11591/ijere.v10i1.20780.

[45] H. Tambunan, B. Sinaga, and W. Widada, "Analysis of teacher performance to build student interest and motivation towards mathematics achievement," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 1, p. 42, Mar. 2021, doi: 10.11591/ijere.v10i1.20711.

[46] I. Umami, "Moderating Influence of Curriculum, Pedagogy, and Assessment Practices on Learning Outcomes in Indonesian Secondary Education," *Journal of Social Studies Education Research*, vol. 9, no. 1, 2018.

[47] X. Zhou, L.-H. Chen, and C.-L. Chen, "Collaborative Learning by Teaching: A Pedagogy between Learner-Centered and Learner-Driven," *Sustainability*, vol. 11, no. 4, p. 1174, Feb. 2019, doi: 10.3390/su11041174.

[48] D. R. S. M. Fuad, K. Musa, and Z. Hashim, "Innovation culture in education: A systematic review of the literature," *Management in Education*, p. 089202062095976, Oct. 2020, doi: 10.1177/0892020620959760.

[49] K. Hussain, R. Konar, and F. Ali, "Measuring Service Innovation Performance through Team Culture and Knowledge Sharing Behaviour in Hotel Services: A PLS Approach," *Procedia - Social and Behavioral Sciences*, vol. 224, pp. 35–43, Jun. 2016, doi: 10.1016/j.sbspro.2016.05.397.

[50] K. Shibuya, "Community participation in school management from the viewpoint of relational trust: A case from the Akatsi South District, Ghana," *International Journal of Educational Development*, vol. 76, p. 102196, Jul. 2020, doi: 10.1016/j.ijedudev.2020.102196.

[51] H. Askell-Williams and G. A. Koh, "Enhancing the sustainability of school improvement initiatives," *School Effectiveness and School Improvement*, vol. 31, no. 4, pp. 660–678, Oct. 2020, doi: 10.1080/09243453.2020.1767657.

[52] B. Fraussen, A. Albareda, and C. Braun, "Conceptualizing consultation approaches: identifying combinations of consultation tools and analyzing their implications for stakeholder diversity," *Policy Sciences*, vol. 53, no. 3, pp. 473–493, Sep. 2020, doi: 10.1007/s11077-020-09382-3.

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