# Web-based Creative Learning and Information System for Rebranding Christian Schools

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**A B S T R A K**

*Menurunnya jumlah calon siswa masuk sekolah swasta disebabkan karena lemahnya manajemen sekolah, kualitas SDM guru, serta reputasi sekolah yang menurun. Tujuan dari penelitian ini adalah rebranding sekolah kristen dengan cara menyediakan sistem informasi manajemen sekolah, ruang kreatif guru dan siswa sebagai sumber dan bahan belajar inovatif dan menyediakan ruang terbuka untuk gereja dan orang tua. Adapun subjek yang terlibat sebanyak 54 audiens. Metode pengumpulan data yang digunakan adalah observasi, dokumentasi, dan wawancara. Adapun instrumen yang digunakan adalah lembar observasi, panduan dokumentasi data sekolah, panduan wawancara, form penilaian ahli terhadap produk yang dikembangkan, form penilaian uji coba terbatas dan uji coba luas, dan uji efektivitas implementasi produk dengan uji T-Test one group design. Setelah data dikumpulkan kemudian dianalisis menggunakan teknik analisis data kualitatif. Penelitian ini merupakan penelitian pengembangan dengan menggunakan desain 4D dan ASSURE. Hasil penelitian menunjukkan bahwa, terdapat perbedaan yang signifikan pada rata-rata skor kreativitas guru sebelum dan sesudah menggunakan SIMaS-Rg. Sehingga dapat disimpulkan bahwa, SIMaS-Rg Kreatif terbukti praktis dan efektif. Penelitian ini diharapkan dapat meningkatkan mutu pendidikan di sekolah Kristen dan menarik minat lebih banyak siswa untuk mendaftar, sehingga mendukung kebangkitan dan kemajuan sekolah Kristen di era digital ini.*

**A B S T R A C T**

The decline in the number of prospective students entering private schools is due to weak school management, the quality of teacher human resources, and the declining reputation of the school. This research aims to rebrand the Christian school by providing a school management information system, a creative space for teachers and students as innovative learning resources and materials, and an open space for churches and parents. The subjects involved were 54 audiences. The data collection methods used were observation, documentation, and interviews. The instruments used are observation sheets, school data documentation guides, interview guides, expert assessment forms for the products developed, limited trial and broad trial assessment forms, and product implementation effectiveness tests with the T-Test one group design test. After the data was collected, it was analyzed using qualitative data analysis techniques. This research is a development research using 4D and ASSURE design. The results showed a significant difference in the average score of teacher creativity before and after using SIMaS-Rg. So, SIMaS-Rg Kreatif proved to be practical and effective. This research is expected to improve the quality of education in Christian schools and attract more students to enrol, thus supporting the revival and progress of Christian schools in this digital era.

## 1. INTRODUCTION

The quality of human resources is the leading indicator in determining the progress of a nation. A developed nation is characterized by having a quality human civilization and being able to meet its needs (Hill et al., 2023; Wei et al., 2023). The world's great civilizations prove this by having historical evidence of how advanced their civilization was in their time. Efforts to create an advanced and quality civilization are characterized by having assets, namely quality and quality human resources. Quality human resources are not formed by themselves but occur due to a process called education (Ang, 2021; Piwowar-Sulej, 2021). Education is essential in creating quality humans, which trains humans to solve the problems they face

(Jeong, 2020; Porkodi et al., 2023). Education is a process of transferring knowledge, experience, and skills that takes place continuously and never stops. Because education has a dynamic nature and always develops from time to time. Talking about education cannot be separated from the name of the school. The school is known as a place for implementing the learning process (Abidah et al., 2020; Wilfried Admiraal Wouter Schenke & Sligte, 2021). We can gain knowledge, experience, skills, and friendships through school. Although the form of school is not always physical in today's digital era, it can be digital through digital schools. The development of technology and the paradigm that education can be done anywhere and anytime resulted in the role of schools beginning to decline and be replaced by other alternative learning resources that can facilitate the need for knowledge from humans. Seeing this growing phenomenon, schools need to transform and adapt to the development of a digital era that is identical to change. This is a challenge for every school to be able to adapt more quickly and progressively, especially with the COVID-19 case in 2020, causing the process of change towards digitalization to be faster.

Transformation towards digital has become mandatory in every school, and Christian schools are no exception. Transformation is carried out in order to increase the attractiveness of the community to enter Christian schools (Nordberg et al., 2020; Ruloff & Petko, 2021). The decline in public interest in entering Christian schools is happening nationally, including Christian schools in Surakarta, Central Java. This is also experienced by schools under the services of PPKS. With the complexity of the problems experienced by Christian schools, the interest of students to enter Christian schools is indirectly reduced. So, it is necessary to strengthen the capacity of the Foundation and Principal in conducting school management and improving the quality of human resources for teachers, as well as increasing the role of the Church and Parents to support Christian Schools to rise again. The aspect that becomes the focus in the transformation process in overcoming the decreasing number of students attending Christian schools is to improve the quality and quality of education in Christian schools. In addition, it needs a unique characteristic that enables Christian schools to compete with public schools and even other private schools. Other researchers shows that the best promotion of schools to have the attention of prospective students is a quality school with unique characteristics, both hard skill and soft skill competencies offered during school (Hadiyanto et al., 2021; Katsigianni & Ifanti, 2023). Seeing this phenomenon and data from MPK Indonesia requires changes and improvements in school quality, starting with a good school management structure, qualified teachers, school branding with unique characteristics, and school digitalization. In order to support the process of transforming Christian schools in a better direction, it is necessary to develop a Web-based (digital) Creative Learning and Information System system to rebrand Christian schools to become better known to the public and as an information medium to share innovations and specializations from Christian schools.

This research offers a new contribution to addressing the challenges of transforming Christian schools towards digitalization, particularly in Surakarta, Central Java. In the face of declining student interest in attending Christian schools, this research proposes several innovative solutions. First, by providing a New Design Interactive Management Information System, stakeholders such as the Foundation, School, Church, and Parents can more easily support the revival of Christian Schools. The system can also be used as a school data collection tool for digital development and consultation. Secondly, this research seeks to create interactive learning resources and materials that facilitate teachers' work and students' creativity by providing a Digital Learning System and Creative Space for Teachers and Students. This is expected to inspire collaboration between teachers and students and enrich learning with their best work. The rebranding of Christian schools in Surakarta is also proposed by developing a web-based Creative Learning and Information System. This system is expected to increase the visibility of Christian schools in the community and become an information medium that shares the innovations and specialities of Christian schools. Thus, this research provides concrete solutions to improving the quality of education in Christian schools and creates unique characteristics that distinguish Christian schools from other schools. Through these solutions, Christian schools can again attract the community's interest and compete well in this digital era.

Thus, the solution steps to overcome this problem are 1) Provision of a New Design of Interactive Management Information System that makes it easy for the Foundation, School, Church, and Parents to provide their respective roles to support the rise of Christian Schools as well as a school data collection facility for development purposes and digital consultation space, 2) Provision of Learning Systems and Digital Creative Spaces for Teachers and Students as interactive learning resources and materials that can accommodate teacher work and student creativity so that it is easily accessible anytime and anywhere and inspires both teachers and students to share and receive their best work. This research will provide an overview of realizing these two solutions in the context of Rebranding Christian Schools in Surakarta. Therefore, the purpose of this research is to Rebrand Christian Schools in Surakarta by providing a school management information system, creative spaces for teachers and students as innovative learning

resources and materials and open spaces for churches and parents to provide creative ideas and suggestions as well as scholarship and school funding opportunities.

## 2.  METHOD

The implementation of this research used a qualitative descriptive research approach and the RnD approach of the Borg and Gall (1983) and Sukmadinata (2008) models with the 4D development procedure 4D (*Define, Design, Develop, Disseminate*). The research subjects in this study were schools in the environment of BKS-GKJ PSKS and PPKS Surakarta with a total of 54 audiences. The research began with an initial study, which was carried out in several steps. Step 1 was conducting FGDs and Observations to see the problems and needs of the Foundation, Schools, Teachers, Students, Churches, and Parents. Step 2 was designing and developing a solutive product design to overcome problems. Step 3 is conducting validity and limited trials to see the practicality of the solutive product. Step 4 is to conduct a limited test and a road test. The data collection techniques used in this study can be divided into two techniques for collecting initial data (needs analysis) and data collection techniques with RnD research methods. Initial data was collected to see the foundation's initial management process, information systems, learning systems in schools, and learning resources used in schools using observation, documentation, and interview techniques. Data collection with the RnD method is carried out with the 4D development mechanism 4D (Define, Design, Develop, Disseminate) for the development of Foundation and School Management Information System and ASSURE development model (Analyze learner; State objectives Select methods, media, and materials; Utilize, technology, media, and materials; Require learner participation; Evaluation and revision) for the development of Web-based Creative Learning (activities and learning resources). The research instruments used to collect data include observation sheets, school data documentation guides, interview guides, expert assessment forms of the developed products, limited trial and broad test assessment forms, and product implementation effectiveness tests with the T-Test one group design test (HL et al., 2023; Thiagarajan et al., 1974).

The flow of interactive SIM development with 4D design in detail is as follows. First, the defining stage (define). What is done is to identify the implementation of organizational management used and identify the problems faced and user needs according to the problems faced. This data is useful for determining the Interactive SIM Design that suits the needs and characteristics of users and the ability of users and the ability of users to utilize technology. Secondly, the design stage of things done is design a new Interactive SIM that makes it easy for the Foundation, School, Church and Parents to give their respective roles to support the rise of Christian Schools as well as a school data collection facility for development purposes and a digital consulting room. Third, the develop stage is to develop a new design of Interactive SIM that makes it easy for the Foundation, School, Church and Parents to give their respective roles to support the rise of Christian Schools as well as a school data collection facility for development purposes and a digital consulting room. The last is the disseminate stage, what is done is to conduct product validation, limited and wide trials of a new design of Interactive SIM that makes it easy for the Foundation, School, Church and Parents to provide their respective roles to support the rise of Christian Schools as well as a school data collection facility for development purposes and a digital consulting room.

The the flow of learning activity development with ASSURE design. First, the analyze learners. What is done is to identifying student or participant characteristics including ability to use technology, learning style and ownership of technology-based tools. This data is useful for determining the methods, learning activities and media needed in the learning process. Secondly, the state objectives stage of things done is setting learning objectives based on the results of analyzing student or participant characteristics. With this principle, it is expected that the relationship between subject matter, technology and pedagogy has the power and appeal to foster creative learning. Third, the select method, media, and materials stage is to determine the methods, media, and teaching materials that will be used for both online and offline learning. This is important because these three components play a role in helping students achieve learning objectives. Fourth, the utilizi media and materials stage is to expert validation and limited trial of the model in small groups (5-10 people) to obtain the practicality of the model. Fifth, the require learner participation stage is to engage participants in learning (1 class test). Learners follow the online learning according to the predetermined design. The last is the evaluated and revise, what is done is to conduct evaluation and revision. This evaluation and revision is done to get the final model that will be used in extensive learning involving several classes to see the effectiveness of learning activities and creative spaces for teachers and students to increase creativity.

Data from FGDs and observation results (qualitative data) were analyzed using qualitative data analysis techniques carried out by Miles & Huberman (1994), Creswell (2012) and Bazeley & Jackson (2013), namely data reduction, data presentation, and conclusion drawing (Shidiq, 2022; Wahid et al.,

2023). Data from expert validation or assessment and limited trials (product validation and practicality) were analyzed using descriptive percentage and category techniques to describe the feasibility and practicality of the innovative product (Web-based Creative Learning and Information System). Initially, the scores of the measurement results using a closed questionnaire were summed up and averaged between the results of expert 1 and expert 2 scores. The effectiveness test of innovation products (Web-based Creative Information and Learning System) is seen from the comparison of the Initial Score and Final Score of the results of teacher creativity in utilizing information systems and the results of developing digital creative work by applying a model for one class with a one group design. The results of the two scores were then tested with the Paired Samples T Test with SPSS 22 for Windows software.

## 3. RESULT AND DISCUSSION

### Result

The results of the joint meeting through the Plenary Session with the Foundation, School and Church administrators, as well as the results of the FGD with PPKS and Church Representatives on February 4, 2023, obtained several important things as preliminary data on the causes of the declining public interest in entering Christian Schools in Surakarta. The problems identified include, lack of communication between school management (foundation), schools and churches in Surakarta; lack of communication between Christian schools in Surakarta; lack of information on school management activities (Foundation) and schools to churches; lack of church support for schools and foundations; no information system provides official and consistent information; BKS, GKJ-PSKS and PPKS do not carry out many activities for the development of schools. And human resources for teachers and students; there is no information system to provide a forum for consultation and assistance for schools; lack of socialization of BKS GKJ-PSKS and PPKS programs and promotion of schools to churches; and there is no digital platform to express creative ideas for schools, teachers and students.

Based on the results of the problem identification that has been done, it is necessary to rise together by rebranding and restoring Christian Schools. Christian schools in Surakarta need the support of contemporary facilities that support the quality of school management and the quality of learning as well as the process of upgrading the human resources capabilities of Principals and Teachers. This is done to provide quality services in the implementation of school management and learning that can provide facilities with criteria such as; facilitate and speed up information; as a place of promotion and performance; school data collection and school promotion; digital consultation tool for schools; teacher and student creation space; a place to share and strengthen each other; learning resources for students; promotion for the community; and information sources for church and parents.

The development of the Management Information System is presented according to the 4D development design (define, design, develop, disseminate). The results of the development are briefly and clearly explained as follows. First, *Define.* Step 1 is to identify the implementation of organizational management used and identify the problems faced and user needs according to the problems faced. This data is useful for determining the Interactive SIM Design that suits the needs and characteristics of users, the ability of users and the ability of users to utilize. The results of Langka 1 obtained that it is necessary to strengthen the capacity of the Foundation and Principal in conducting school management and, improving the quality of human resources for teachers and also increasing the role of the Church and Parents to support Christian Schools to rise again. What is needed to rebrand Christian schools in Surakarta is by; 1) providing renewed school management with an information system that facilitates and accelerates information, a place for promotion and performance, school data collection, and school consultation facilities; 2) providing creative spaces for teachers and students as innovative and contemporary learning resources and materials as well as creative spaces for students to channel their creativity; and 3) providing open spaces for churches and parents to provide creative ideas and suggestions as well as scholarship and school funding opportunities.

Second, *Design and Develop.* Step 2 and Step 3 involved designing a new design of Interactive SIM and developing it to make it easier for the Foundation, School, Church and Parents to give their respective roles to support the rise of Christian Schools as well as a school data collection facility for development purposes and a digital consultation room. The new design of Interactive SIM is named SIMaS-Rg Kreatif. The Creative SIMaS-Rg HOME view can be accessed at https://webppks.com . The HOME page will provide the main MENU, which are the PPKS Profile Room, School Management Room, Integrated and Partial Elearning LMS Room, School Creative Room, Teachers, Students, Church, Daily Devotional, Parents and Promotion, Inspiration Room and Consultation Room. These menus look like Figure 1, Figure 2, and Figure 3.

**Figure 1.** PPKS Profile Menu-School Management Room-LMS Room



**Figure 2.** Creative Space School, Teachers, Students, Church, Daily Devotional, Parents and Promotion



**Figure 3.** Inspiration Room, and Consultation Room

*Third, Disseminate.* The innovative product design that has been developed is validated by experts in technology and school and organizational management. Innovative products that have been validated are tested on a limited basis by Foundation administrators, Foundation and school admins and teachers under the Foundation. Based on the results of the limited trial, the innovative product was widely tested to all Foundation administrators, Foundation and School Admins, as well as to teachers in 12 Schools under PPKS services. The following is a limited trial activity. The results of expert validation of the SIMaS-Rg Creative innovation product are shown in Table 1.

**Table 1**. Expert Assessment Results for Creative SIMaS-Rg Innovation Products

| No. | Indicator | Ideal Score | Actual Score | | Average | P (%) | Category |
|-----|-----------|-------------|--------------|-----|---------|-------|----------|
| | | | First expert | Second expert | | | |
| 1 | Ease of access to SIMaS-Rg Creative | 16 | 14 | 13 | 13.5 | 84,4% | Very High |
| 2 | Completeness of SIMaS-Rg Creative Menu | 16 | 14 | 14 | 14 | 87,5% | Very High |
| 3 | Easy Access and Management of School Data | 20 | 16 | 14 | 15 | 75% | High |
| 4 | Easy Access to Creative, Inspiration and Consultation Spaces | 20 | 15 | 15 | 15 | 75% | High |

Based on the model feasibility criteria, the results obtained in the very high and high categories (percentage value ≥ 61%) so that SIMaS-Rg Kreatif is suitable for use. The practicality of using SIMaS-Rg Kreatif is done by analyzing the assessment results from teachers and students on limited implementation. The data from the limited assessment were recapitulated and totalled (actual score), then compared with the ideal score (results can be seen in Table 1). The effectiveness test was carried out by comparative analysis, namely comparing the scores of respondents' creativity results before and after receiving training with the new design of SIMaS-Rg Kreatif for one class with a one-group pretest-posttest design. The final scores before and after the training were compared using the Paired-Samples T-Test with the help of SPSS 23. The results of limited assessment (practically test) are shown in Table 2.

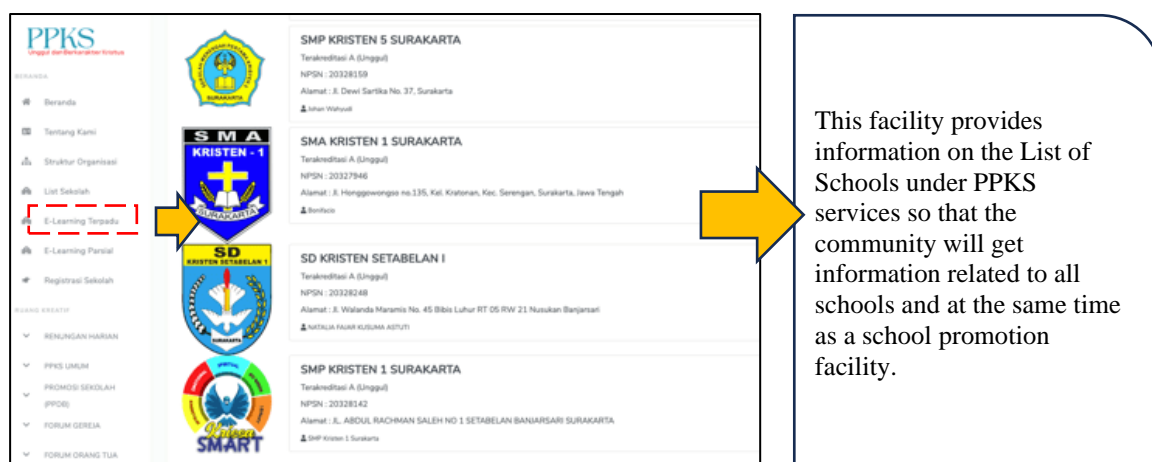**Table 2.** Limited Assessment Results (Practicality Test)

| No. | Indicator | Ideal Score | Actual Score | P (%) | Category |
|---|---|---|---|---|---|
| 1 | Ease of access to SIMaS-Rg Creative | 16 | 13 | 81,25% | Very High |
| 2 | Completeness of SIMaS-Rg Creative Menu | 16 | 13 | 81,25% | Very High |
| 3 | Easy Access and Management of School Data | 20 | 16,25 | 81,25% | Very High |
| 4 | Easy Access to Creative, Inspiration and Consultation Spaces | 20 | 16,43 | 82,43% | Very High |

Based on the results of the limited assessment by teachers and students, the results obtained in a very high category (AP value ≥ 61%) so that the new design of Creative SIMaS-Rg is practical to use. The first facility in SIMaS-Rg Kreatif is the Foundation Information System, which is useful for school registration, foundation profile, foundation news room, inspiration room and consultation room. The first part facilitating school education is the registration room presented in Figure 4. In addition, there is an example of a registered school display presented in Figure 5.
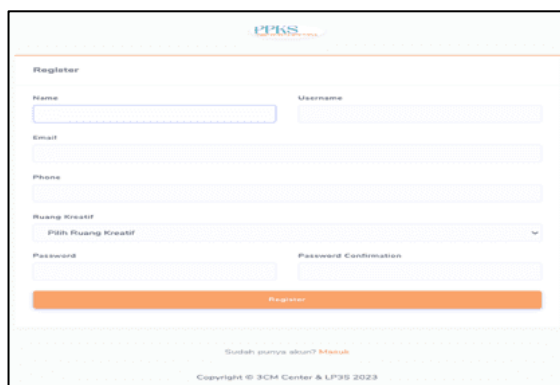


The following facilities are used for school registration. All schools under the PPKS service are required to register with the SIMaS-Rg Kreatif information system in order to input school data and also get creative space facilities for schools, teachers and students. The registration process can be done manually by filling in data according to the form provided in the system and can also be registered using a google account owned by the school.

**Figure 4**. School Registration Facility



This facility provides information on the List of Schools under PPKS services so that the community will get information related to all schools and at the same time as a school promotion facility.
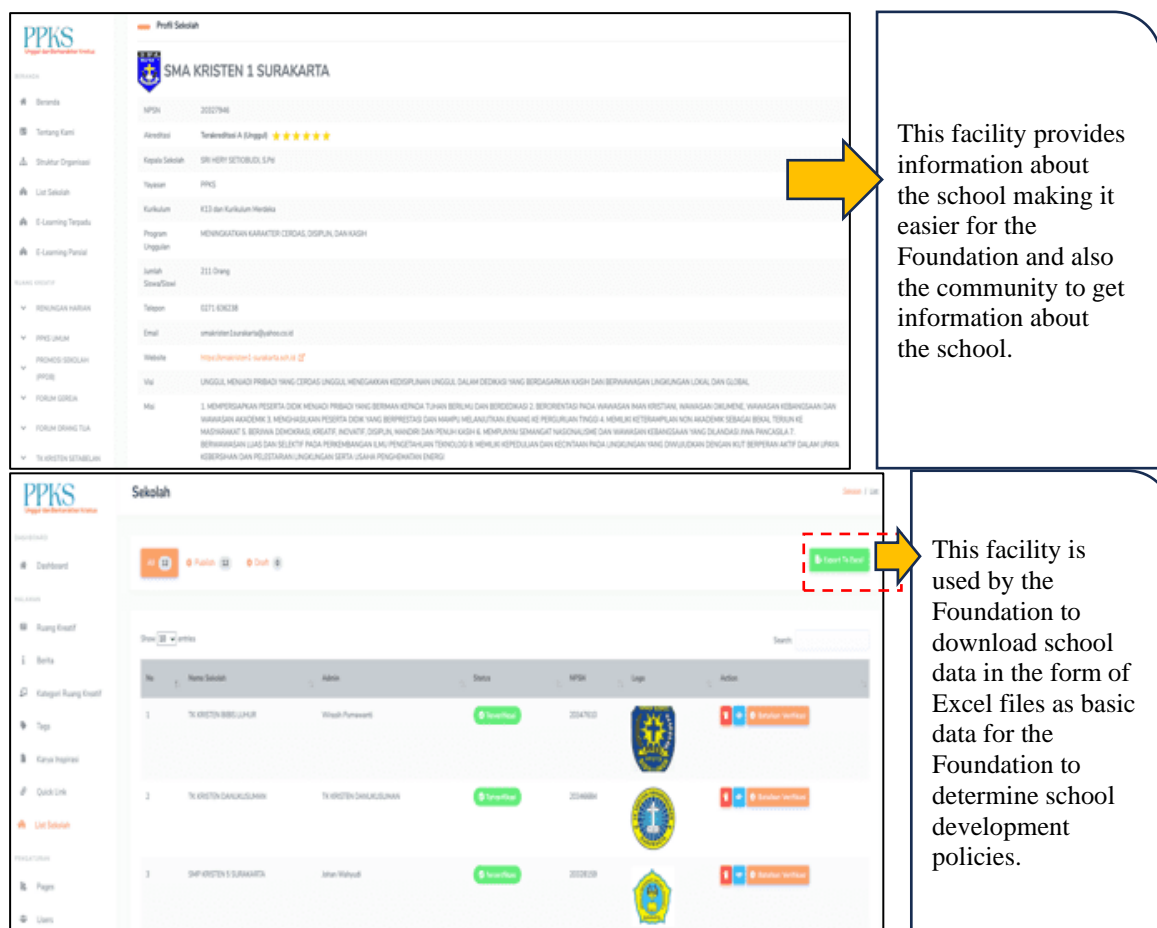
**Figure 5**. Example of Display of Schools that Have Registered

The downloaded Excel data contains the School Name, Accreditation Status, NPSN, Principal Name, Address, Phone Number, Email, Website Address, Vision, Mission, Location, Number of Classes, Curriculum, Number of Teachers (S1, S2, S3), Number of Education Personnel, Number of Students according to Religion, Participation in IKM, and Excellent Programs. This facility will provide school facilities to update school data periodically so that the Foundation can periodically monitor and analyze needs based on this data. This excel data will make it easier for the Foundation to view school data and process school data so that it can classify and also follow up on processed data to determine assistance programs for schools according to each school's data. Apart from being a data collection facility and a source of school data, this information system also provides consultation facilities for schools, teachers, students and parents. The following is a view of the consultation facilities provided.

Schools, teachers, students and parents have the opportunity to submit consultations related to School Development, Teacher HR Development, Learning Development, Online or Blended Learning, Student Creativity Development, and others. This facility will provide data on the results of consultations from schools, teachers, students and parents, which will become the Foundation's data as material for development and assistance that the Foundation will carry out. An inspiration room and a room for daily devotions are also available in this information system. Where the inspiration room will provide space for school pastors and PPKS, as well as teachers and students who have works that can inspire can be included in the following facilities. This facility will provide an opportunity to give each other and evaporate from successful experiences and life motivation and success in studies as well as in life success and strengthening the way of life for school and community members. The daily devotional room will be a place where PPKS provides daily devotionals for the school that will be used as a routine daily devotional before starting learning activities every day. Thus, this system is also a means to facilitate Christian faith mentoring for students.

There is also a promotion room for schools under the PPKS service. This space will provide an opportunity for schools to promote their schools to the community so that they are increasingly recognized. The existence of this joint promotion room will make it easier for PPKS to provide assistance and control the quality of promotions made by each school so that PPKS will be facilitated in assisting school

promotions. This joint promotion will maximize the quality and impact of the promotion carried out by schools and have an impact on increasing the number of prospective students entering PPKS schools.

The second facility provided by SIMaS-Rg Kreatif is a creative space for schools, teachers, students, churches and parents. This creative space serves as a place to publish the results of school, teacher and student creativity, as well as a creative space for churches and parents to provide creative ideas and ideas for the development of learning at school. This space will be a digital learning resource for students that can be accessed anytime and anywhere. This creative space is also a sharing space between teachers as a learning resource and sharing good work between students to inspire each other.

The SIMas- Rg Kreatif innovation product needs further testing to see its effectiveness. The effectiveness of the product was carried out with a broad trial conducted with 54 audiences. (foundation administrators and administrators, school administrators and teachers). Effectiveness is seen from the impact of the implementation of the use of SIMaS-Rg Kreatif with the support of activities and learning resources provided. The effectiveness test was conducted by looking at the results of teacher creativity (43 teachers) before and after using SIMaS-Rg Kreatif facilities and training. The results of the effectiveness test of creative products using statistical tests paired with T-tests. This was chosen because the design used a one-group pre-test post test design. Based on the results of calculations and hypothesis testing, the sig. (2-tailed) is 0.000 or less than 0.05, so it can be said that there is a significant difference in the average score of teacher creativity before and after using Creative SIMaS-Rg. The results of the Paired Samples Test are shown in Table 3, and Table 4.

**Table 3.** Paired Samples Test Results

|  | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| Pretes | 43 | 75.58 | 3.653 | .557 |
| Postes | 43 | 83.72 | 4.511 | .688 |

**Table 4.** Paired Samples Test Results

|  | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|
|  |  |  |  |  | Lower | Upper |
| Pretes | 135.675 | 42 | 0.000 | 75.581 | 74.46 | 76.71 |
| Postes | 121.702 | 42 | 0.000 | 83.721 | 82.33 | 85.11 |

In addition to the results of the Paired Samples Test as data to see the effectiveness of the product, it is also supported by the assessment of the management and admin of the Foundation (4 aspects) and also the assessment by teachers (only 3 aspects). The results of the PPKS management and admin response to creative simas-rg implementation are shown in Table 5 and teachers' responses to the creative implementation of SIMaS-Rg are shown in Table 6.

**Table 5.** PPKS Management and Admin Response to Creative SIMaS-Rg Implementation

| No. | Indicator | Ideal Score | Actual Score | P (%) | Category |
|---|---|---|---|---|---|
| 1 | Ease of access to Creative SIMaS-Rg | 16 | 14 | 87,5% | Very High |
| 2 | Completeness of Creative SIMaS-Rg Menu | 16 | 14 | 87,5% | Very High |
| 3 | Ease of Access and Management of School Data | 20 | 20 | 100% | Very High |
| 4 | Ease of Access to Creative Space, Inspiration and Consultation | 20 | 20 | 100% | Very High |

**Table 6.** Teacher Response to Creative SIMaS-Rg Implementation

| No. | Indicator | Ideal Score | Actual Score | P (%) | Category |
|---|---|---|---|---|---|
| 1 | Ease of access to Creative SIMaS-Rg | 16 | 14 | 87,5% | Very High |
| 2 | Completeness of Creative SIMaS-Rg Menu | 16 | 13 | 81,25% | Very High |
| 3 | Ease of Access to Creative Space, Inspiration and Consultation | 20 | 17 | 85% | Very High |

Positive responses were also shown from participants who used SIMaS-Rg Kreatif. More than 95% of the participants responded that the facilities and activities in SIMaS-Rg Kreatif provide very good and good benefits for the Foundation and school. These benefits include 1) for school development and classroom learning, 2) increasing school promotion and schools are increasingly recognized digitally, and 3) improving the quality of digital learning at school. In addition to the benefits obtained, participants also said that the use and training on the use of SIMaS-Rg Kreatif needs to be continued and utilized further for the management of the Foundation and the improvement of digital learning in schools. the participants' response on school and learning development is presented in Figure 6, participants' response on school promotion and introduction is presented in Figure 7, participants' response on digital learning improvement is presented in Figure 8, and participants' response on simas-rg creative sustainability is presented in Figure 9.

**Figure 6**. Participant Response in School and Learning Development

**Figure 7**. Participants' Response to School Promotion and Introduction

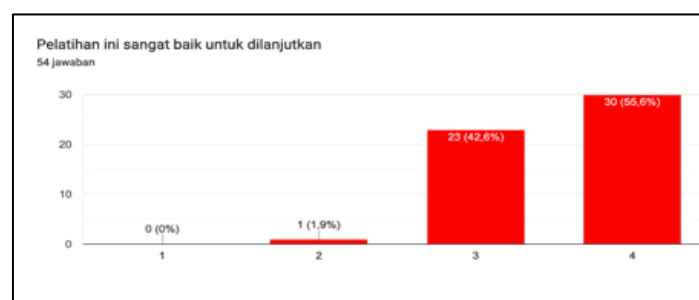**Figure 8**. Participant Response to Enhanced Digital Learning

**Figure 9**. Participants' Response to SIMaS-Rg Creative Sustainability

**Discussion**

Based on the results of data analysis in accordance with the product development process and the results of practicality and effectiveness tests, it is found that SIMaS-Rg Kreatif is feasible to use and effective in developing creativity. This happens because of several advantages provided by SIMaS-Rg Kreatif. The first advantage provided is ease of access as an information system and digital creative space so as to provide time effectiveness, digital data storage of schools and creative works, ease of filling in data and creative spaces, ease of use of consultation and inspiration spaces and can be accessed anytime and anywhere (Ajizah, 2021; Gane et al., 2018; Hanifah Salsabila et al., 2020; Tashbolatovna et al., 2022). These advantages make it easier for foundations to process school data, school development, and school assistance and provide creative space for teachers and students to develop learning processes and activities. The second advantage that supports the feasibility and effectiveness of the product is that the system provides school data collection facilities, consultation rooms and school inspiration. This system makes it easy to carry out the school management process by the Foundation, provides consultation facilities and provides a space for inspiration for schools. This reinforces that digitally created information systems can improve school management processes and school quality (Ajizah, 2021; Gane et al., 2018; Mahmudah & Putra, 2021).

The third advantage is that this system can improve the quality of the learning process, which is packaged in a digital form that opens creative space for teachers and students. This is in accordance with the role of technology in education, where the use of information technology can improve the process and quality of education (Al-Rahmi et al., 2020; Fernández-Gutiérrez et al., 2020). Another role of using technology to improve the quality of learning is to provide facilities to overcome the performance problems of educational organizations in a structured manner and allow teachers to always develop themselves with innovations in digital learning (Hanifah Salsabila et al., 2020; Rodríguez-Abitia et al., 2020). In addition, this system provides support for how education can play a role in improving the quality of human resources (Ang, 2021; Putri Elisa et al., 2022). Qualified resources (in this case, teachers) will train them to solve problems encountered (especially in learning) (Jeong, 2020; Porkodi et al., 2023). The fourth advantage is that this system becomes a space for school promotion with the creative space provided for each school. Promotion is provided in the form of the publication of creative activities in learning and also the creative work of teachers and students published in SIMaS-Rg Kreatif. This is a special characteristic for Christian schools as promotional material so that they can compete with public schools and even other private schools. This is in accordance with research from other researchers which shows that, the best school promotion is a quality school and has special characteristics, both hard skill and soft skill competencies offered during schooling (Katsigianni & Ifanti, 2023; Setiawan Wibowo et al., 2020).

In addition to these advantages, SIMaS-Rg Kreatif also proved to be effective in improving teacher creativity by providing digital learning resources and activities. This can be seen from the increase in creativity scores before and after using SIMaS-Rg Kreatif. The system provides ample space for co-creation and learning processes and a positive and fun learning environment. This fosters motivation and creativity to produce something that is creative in the form of works that can be utilized as digital learning resources and also digital games in SIMaS-Rg Kreatif. Creativity arises because there is an atmosphere, environment and community that is conditioned. This shows that creativity arises because of the opportunity to do so. Creativity arises because there is an atmosphere, environment and community that is conditioned to do something creative (Fan & Cai, 2020; Wahyudi et al., 2020). This also proves that creativity is an integrated quality of a person and becomes a person's capital to work according to his creativity. These results also show the impact of creativity in learning prepared by teachers able to develop creative thinking skills so that students' creativity increases (Ausat et al., 2023; Chen et al., 2019; Wahyudi et al., 2020).

This study has several limitations that need to be acknowledged to understand the results in an appropriate and realistic context. First, the main limitation is the scale and scope of the study. This study focused on Christian schools in Surakarta, Central Java, so the results may only be partially applicable or generalizable to other regions with different conditions, cultures, and challenges. Therefore, the results of this study may only partially represent the situation of Christian schools in other areas with different contexts and challenges. The solution to this limitation is to conduct further research in different locations to get a more comprehensive picture of the problems Christian schools face in Indonesia. Comparative research can help identify similarities and differences between regions so that more effective and contextualized solutions can be produced. This research is expected to improve the quality of education in Christian schools and attract more students to enrol, thus supporting the revival and progress of Christian schools in this digital era.

## 4. CONCLUSION

SIMaS-Rg Kreatif has proven to be practical and effective in providing 1) School management to facilitate and accelerate information, a place for promotion and performance, school data collection, school consultation facilities, 2) creative space for teachers and students as innovative learning resources and materials in digital form as well as creative space for students to channel their creativity, and 3) open space for the community (church) and parents to provide creative ideas and suggestions as well as scholarship and school funding opportunities. This can be realized because SIMaS-Rg Kreatif provides 4 advantages, namely 1) easy access as an information system and digital creative space; 2) provides school data collection facilities, consultation rooms and school inspiration; 3) improves the quality of the learning process packaged in digital form which opens creative space for teachers and students; and 4) becomes a school promotion space with the creative space given to each school.

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