

Analysis of elementary school teacher needs to learning media android apps based on Smart Apps Creator (SAC)

Ani Nur Aeni^{1*}, Nurdinah Hanifah², Rahimah³, Ahmad Arifuddin⁴, Marwan Maulana⁵,
Kamal Aramdan Akbar⁶, Achmad Nurul Hafidz⁷, Muhammad Dzikri Ajri Al-Faridzi⁸

^{1,2,5,6,7}Prodi PGSD, Universitas Pendidikan Indonesia Kampus Sumedang-Sumedang

³Prodi Bahasa Arab, Universitas Sumatera Utara, Medan

⁴Prodi PGMI, IAIN Syekh Nurjati, Cirebon

⁸Prodi Manajemen, Universitas Pendidikan Indonesia, Bandung

*Corresponding author, email: aninuraeni@upi.edu

Keywords

Smart Apps Creator (SAC)
Android App
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Abstract

This research is motivated by the fact that learning conditions in the digital era must be supported by digital media, while the use of digital media in learning is still limited due to several obstacles faced by teachers. The purpose of this study is to analyze the needs of elementary school teachers for SAC-based android application learning media. The research method used a survey with a google form instrument involving 246 elementary school teacher participants from West Java, Central Java and Banten. Data analysis is carried out automatically by google form so that results are obtained in the form of the number and percentage of participants which are visualized in the form of a pie chart and then interpreted into percentage categories and described qualitatively. The results showed that: 1) more than half of the participants already knew the android application learning media, and stated that the android application was appropriate and effective to be used as a learning medium, but less than half of the participants had never made android application media, 2) a small number of participants had known and had seen SAC products, but more than half had the desire to know more about SAC. From these results, it can be concluded that 1) It is necessary to develop a lot of digital learning media such as SAC-based android applications so that they can be used by teachers in teaching, 2) Teachers need to upgrade their knowledge and skills in the use of technology for learning.

1. Introduction

Learning in the digital era must be supported by digital media. Digital learning media is a learning media in digital form, which can be in the form of audio, visual, and others that do not have a physical but are electronic. There are many varieties of digital media, such as podcasts (Mayangsari & Tiara, 2019), multimedia (Indrawan, Wijoyo, Wiguna, & Wardani, 2020), Augmented Reality (AR) (Mustaqim, 2016), Virtual Reality (VR) (Hendrayana, Rahmah, & Ariatama, 2022), Android apps (Riyan, 2021, and others).

The use of digital media in learning is still limited, namely 1) limited due to the lack of support for teachers' ability to create or use it, 2) limited due to lack of motivation in some teachers, especially those who are approaching retirement, 3) limited opportunities for teachers to be able to develop their technological skills, 4) limited because of the facilities and infrastructure to be able to use digital media (Syaulan Sahelatua & Vitoria, 2018; An & Sukartono, 2023; Gaol & Simanjuntak, 2023)). However, these limitations should not prevent elementary school teachers from continuing to catch up in their ability to master technology, because technological skills must be competencies mastered by teachers, as listed in the 4 competencies of teachers, namely pedagogical competence, personality competence, professional competence, and social competence (Hasnawati, 2020). Mastery of technology in learning is included in professional competence, meaning that if the teacher is able to master or use technology in learning, then the teacher already has professional competence.

The learning media currently used is technology-based learning media, such as the Andorid application. This media is very appropriate to use in the digital age, considering that android application media is media that is operated on a smartphone (cellphone) or gadget, where students today are very familiar with smartphones. So to minimize the bad impact of the use of cellphones (HP), one of the solutions is to use cellphones as a learning medium.

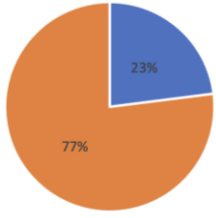
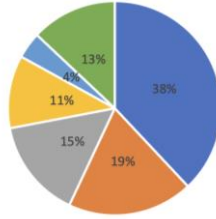
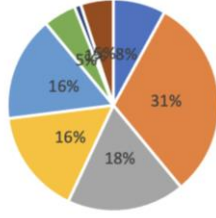
Given the importance of using technology-based media in this digital age, this study was conducted to analyze teachers' needs for smart apps creator (SAC)-based android application learning media. SAC is a desktop application used to create apps and iOS without programming code (Azizah. AR., 2020). SAC is a form of digital media. The main problems in this study are:

1. How do elementary school teachers know about learning media in the form of android applications?
2. What is the knowledge of elementary school teachers about the Smart Apps Creator (SAC) application?

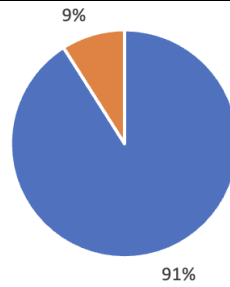
2. Method

The research method used is a survey with a questionnaire instrument distributed online through google form. The participants involved in this study were 246 elementary school teachers spread across the provinces of West Java, Central Java, and Banten. The characteristics of the participants were seen from the elements of gender, age, working period, school status where they taught, personnel status, and teacher status. The following table shows the characteristics of the participants.

Table 1. Characteristics of Respondents

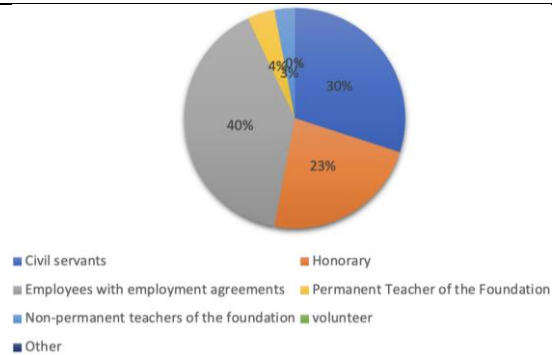
No	Element	Amount (%)
1.	Gender	 <p>Male 23% Female 77%</p>
2.	Age	 <p>less than 30 years old 38% 30-35 years old 19% 36-40 years old 15% 41-45 years old 11% 46-50 years old 4% Above 50 years old 13%</p>
3.	Working time	 <p>less than 1 year 16% 1-5 years 31% 6-10 years 18% 11-15 years 16% 16-20 years 5% 21-25 years 5% 26-30 years 5% Above 30 years old 5%</p>

4. School Status



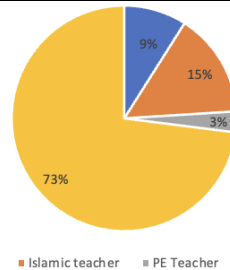
■ Public Schools ■ Private Schools

5. Employment Status



■ Civil servants ■ Honorary
 ■ Employees with employment agreements ■ Permanent Teacher of the Foundation
 ■ Non-permanent teachers of the foundation ■ volunteer
 ■ Other

6. Teacher Status



■ Subject Teacher ■ Islamic teacher ■ PE Teacher ■ Classroom Teacher

Data processing is carried out automatically through google forms, so that the results of answers obtained from participants immediately appear on the respondent menu. The calculation of the results includes the number of participants, percentages and visualization of respondents' answers in the form of pie charts. Data analysis was carried out in a qualitative descriptive manner, with the stages of 1) data reduction and categorization, 2) data presentation, 3) conclusion using the following percentage interpretation:

Table 2. Percentage Interpretation

Percentage	Interpretation
0%	No one
1% - 24%	a small part
25% - 49%	Less than half
50%	Half
51%-74%	More than half
75%-99%	Most
100%	All

(Source: (Azahrah, Afrinaldi, & Fahrudin, 2021)

3. Results and Discussion

3.1. Elementary School Teachers' Knowledge About Learning Media in the Form of Android Applications

Data on this matter was taken from the results of the google form that had been filled out by the participants. There are 6 questions related to the android application, namely: 1) Do you know about the learning media in the form of the android application?, 2) Have you ever seen the learning media in the form of the android application?, 3) Have you ever used the learning media in the form of the android application?, 4) Have you ever made learning media in the form of an android application?, 5) Do you think the android application is effective in being used as a learning medium?, 6) Do you think the Andorid application is appropriate to be used as a learning medium? Considering that nowadays children are very close to cellphones.

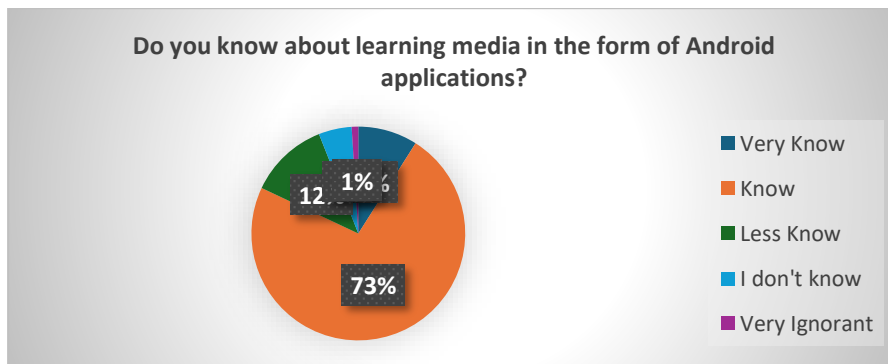


Figure 1. Questionnaire Results About Knowing and Not Learning Media In the form of an Android application

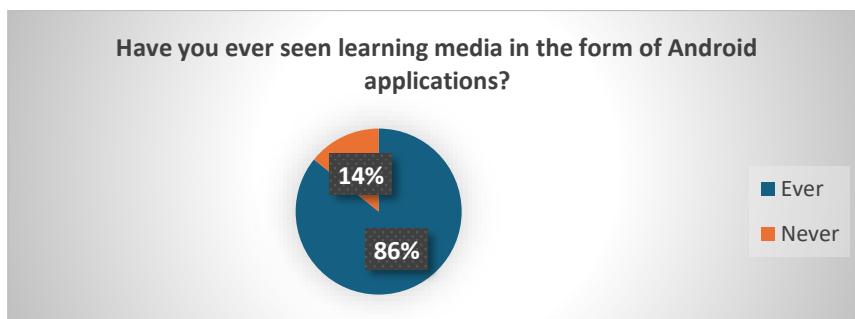


Figure 2. Questionnaire Results About Having and Not Seen Learning Media In the form of an Android application

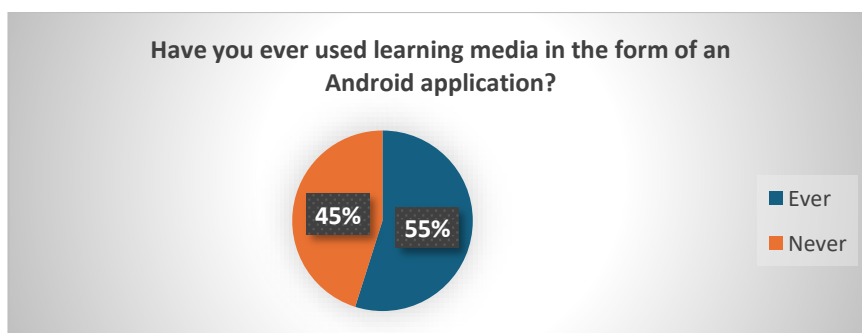


Figure 3. Questionnaire Results About Ever and Not Using Learning Media In the form of an Android application

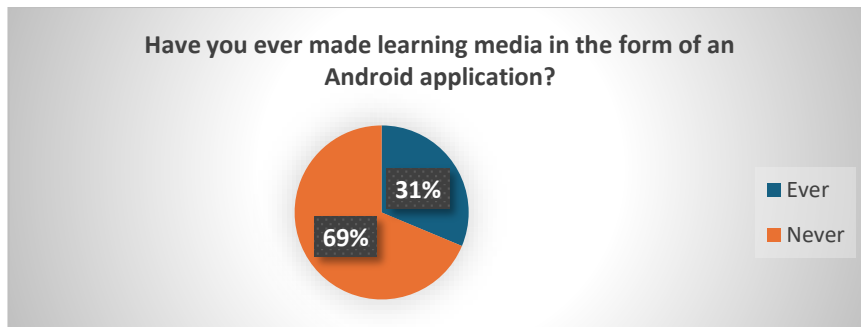


Figure 4. Questionnaire Results About Ever and Not Making Learning Media In the form of an Android application

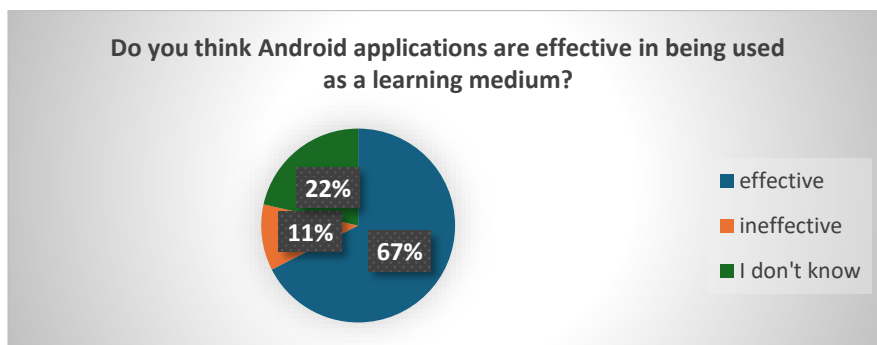


Figure 5. Questionnaire Results on the Effectiveness and Whether the Android Application is Used as a Learning Media

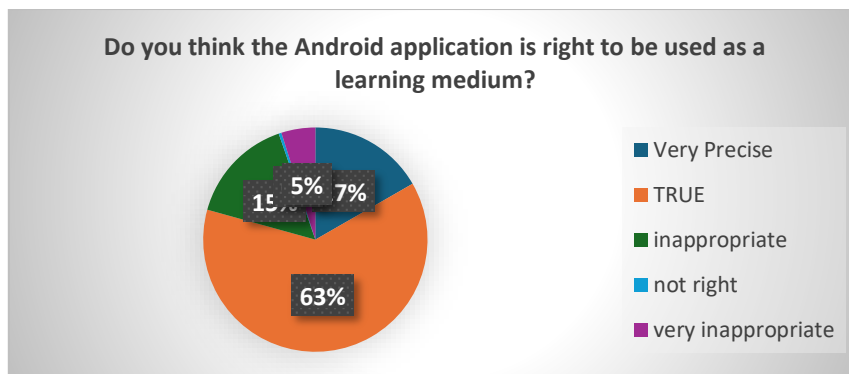


Figure 6. Questionnaire Results About the Appropriateness and Absence of Android Applications Used as a Learning Media

Based on the data that has been presented in the teacher's knowledge results section about the learning media of the android application, it can be classified based on: 1) knowledge, 2) experience, 3) effectiveness, 4) accuracy.

Table 2. Knowledge Recapitulation of Andorid Application Learning Media

Num	Question Item	% Answer					Sum
		Very know	Know	Less know	I don't know	Very ignorant	
1.	Do you know the learning media in the form of the Andorid application?	9	73	12	5	0	100
Category		a small part	More than half	a small part	a small part	No one	

Referring to figure 1 and table 2, it is known that the highest answer of participants is "know", which is 72.8% or as many as 179 participants already know about learning media in the form of android applications. Android applications are included in the form of electronic learning media, because they are operated on smartphones and gadgets with the android system (Raharjo & Pitaloka, 2020). If you look at the percentage of participants, more than half of them know the learning media in the form of an android application, meaning that this android application is familiar to teachers and is widely used (Riyan, 2021)

Table 3. Recapitulation of Experience About Andorid Application Learning Media

Num	Question Item	% Answer		
		Ever	Never	Sum
1.	Have you ever seen learning media in the form of an android application?	86	14	100
2.	Have you ever used learning media in the form of an android application?	55	45	100
3.	Have you ever made learning media in the form of an android application?	31	69	100
Average		57,3	42,7	100
Category		More than half	Less than half	

Referring to table 3, it is known that more than half of elementary school teachers have experience, both seeing, using, and making android applications. In more detail in figure 2, it is stated that most of the participants or as many as 211 elementary school teachers have seen learning media products in the form of android applications. The definition of seeing can be seeing directly with the product or seeing through shows in other media such as YouTube. Currently, youtube is the choice of users, because youtube has many advantages (Titin et al., 2021) such as learning tutorials for a product.

The percentage who "have seen" is greater than the percentage who "have used", which is 54.9% (135 people), meaning that more than half have used the android application learning media. If you look at the comparison of the number of people who have "used" less than those who have "seen", it means that not all who have "seen" are also "used". Using learning media Android applications require the main device, namely a smartphone or gadget, where the application must be installed on a smartphone or gadget. This is where teachers must have the ability to use technology for the benefit of learning (Ceha, Prasetyaningsih, Bachtiar, & Nana, 2016).

If when the teacher teaches in the classroom will use the learning media of the Andorid application, then every student should bring a smartphone or if the student is not allowed to bring it, then the teacher or the school must facilitate to provide it with a number of students, because for some schools there is a rule that students are not allowed to bring cellphones to school, this is the policy of the school (Kurniawan & Hidayat, 2020). This rule, if applied at the elementary level, can be effective, but if applied at the high school level, it does not seem to be effective because there are still some students who violate it (Andesta & Fernandes, 2020).

Based on the results of the questionnaire presented in figure 4, it can be seen that the number of those who have "made" android application learning media is less than those who have "seen" and who have used, which is only 31.3%, meaning that a small number of elementary school teachers, namely 77 people, have made an android application. This number is decreasing from the category of viewing and using, so that if illustrated with an image, it becomes a downward collapse or an inverted pyramid.

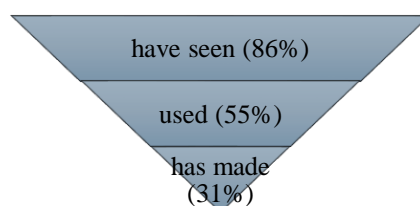


Figure 12. Participant's Experience in Seeing, Using and Creating Learning Media in the Form of Android Applications

Only a small number of elementary school teachers have ever made android application learning media, and vice versa, most of them have never. Never have this been because there is no time to make it or you can't make it because you don't know how. Indeed, to make an android application, knowledge is needed. How to make an andorid application can be by using the i-spring suite (Aeni et al., 2024) or by using other applications such as Smart Apps Creator (SAC) (Wiyanti & Dinihari, 2021) or with a studio application (Nasution, Efendi, & Kamil Siregar, 2019).

Table 4. Recapitulation of Effectiveness of Andorid Application Learning Media

Num	Question Item	% Answer			Sum
		effective	ineffective	I don't know	
1.	Do you think the Andorid application is effective as a learning medium?	68	11	21	100
Category		More than half	a small part	a small part	

Regarding the effectiveness of using android applications as a learning medium, more than half of the participants (166 teachers) stated that it was effective, meaning that there is no doubt that the android application can be used as a learning medium, especially since it has been proven through several research results on the effectiveness of using android applications in learning (Saputra & Adelindra, 2023; Muhadzdzib, Rahmawati, & Busono, 2023; Puspita & Putri, 2021; Astuti & Wilson, 2020; Elvina & Suryantara, 2022).

Table 5. Recapitulation of Accuracy of Andorid Application Learning Media

Num	Question Item	% Answer					Sum	
		very precise	true	Inappropriate	not right	very inappropriate		I don't know
1.	Do you think the Andorid application is right to be used as a learning medium?	17	63	15	0	0	5	100
Category		a small part	More than half	a small part	No one	No one	a small part	

Based on figure 6 and table 5, it appears that more than half (62.6%) or as many as 154 elementary school teachers stated that android applications are appropriate for learning media. When compared to conventional learning media, android applications have several advantages, including user friendly, which is easy to use (Hasibuan & Maruf, 2020).

3.2.Elementary School Teachers' Knowledge About the Smart Apps Creator (SAC) Application

Data on this matter was obtained from a google form given to participants, with 5 types of questions, namely: 1) have you ever heard of the term Smart Apps Creator (SAC), 2) Do you know what Smart Apps Creator (SAC) is, 3) have you ever seen products from Smart Apps Creator (SAC)?, 4) Have you ever used products from Smart Apps Creator (SAC), 5) Do you want to know about Smart Apps Creator (SAC)?

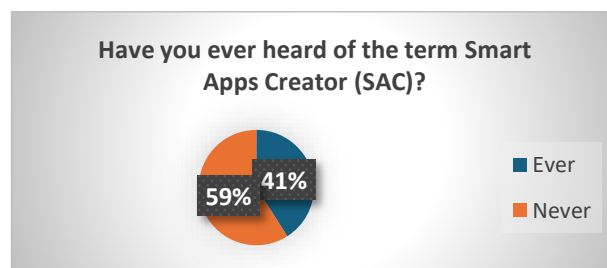


Figure 7. Questionnaire Results About Having and Not Heard the Term SAC

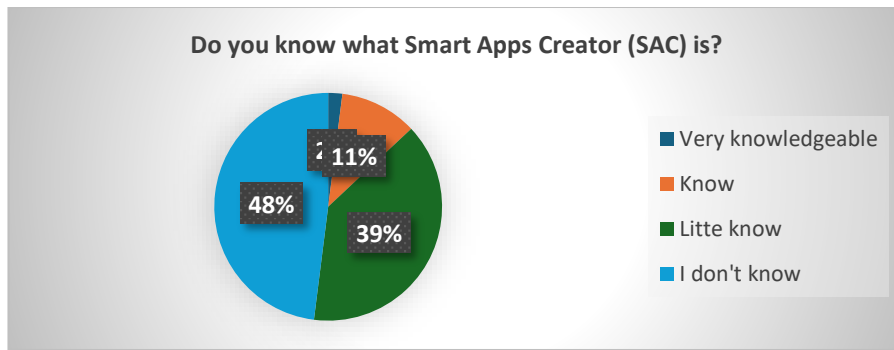


Figure 8. Questionnaire Results on Knowing and Not SAC

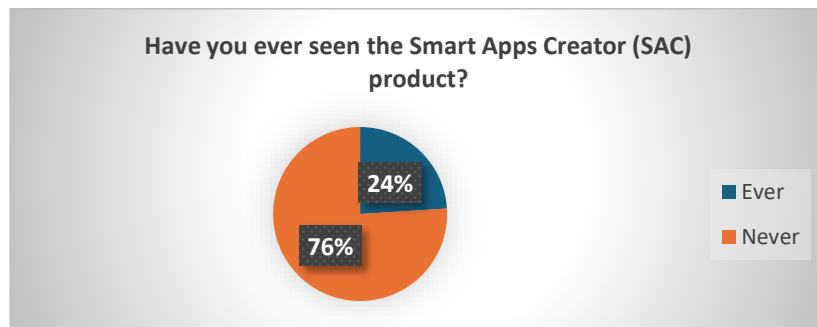


Figure 9. Questionnaire Results About Having and Not Seen Products from SAC

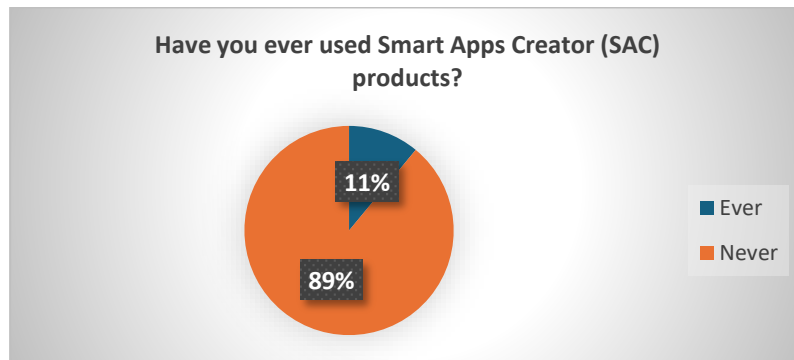


Figure 10. Questionnaire Results About Having and Not Used Products from SAC

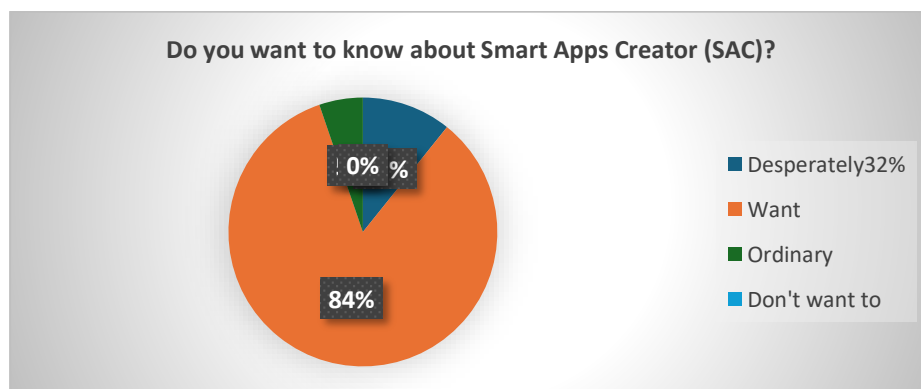


Figure 11. Questionnaire Results About Wanting and Not Knowing SAC

Based on the data that has been presented in the section of the results of elementary school teachers' knowledge about the SAC application, it is classified based on: 1) level of knowledge, 2) experience, 3) desire.

Table 6. Recapitulation of the level of knowledge about Smart Apps Creator (SAC)

Num	Question Item	% Answer				Sum
		very knowledgeable	know	Little Know	I don't know	
1.	Do you know what SAC is?	1,6	10,6	39,4	48,4	100
Category		a small part	a small part	Less than half	Less than half	

The knowledge of elementary school teachers about SAC is still minimal, as can be seen from the data presented in table 6 and figure 8 that a small part (10.6%) or as many as 26 people already know what SAC is. SAC stands for Smart Apps Creator, which is a desktop application used to create applications and iOS without programming code (Azizah. AR., 2020). SAC is an application that is used to create attractive android-based interactive multimedia. With this Smart Apps Creator (SAC) media, developers can combine text, images, and videos into a single unit in the form of attractive interactive multimedia (Elviana, 2022).

Table 7. Recapitulation of the Smart Apps Creator (SAC) Experience

Num	Question Item	% Answer		Sum
		Ever	Never	
1.	Have you ever heard of the term SAC?	41	59	100
2.	Have you ever seen a product from SAC?	24	76	100
3.	Have you ever used products from SAC?	11	89	100
Average		25	75	100
Category		Less than half	More than half	

The experience of elementary school teachers with SAC is also still minimal. More than half (74.9%) have never heard, seen and used SAC products. The percentage of experiences that have never used SAC is greater than that of those who have never seen, and the experience of having never seen is greater compared to the experience of having never heard of the term SAC. This comparison can be illustrated with the pyramid as follows.

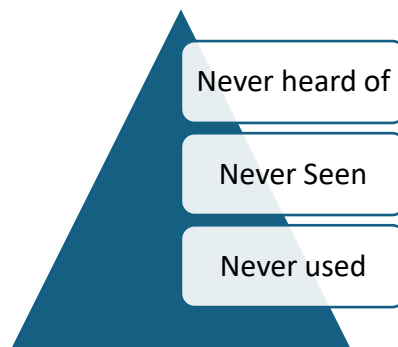


Figure 13. Comparison of Participants' Experiences in Using, Seeing and Hearing SACs

Referring to table 7 number 3 and figure 10, most (89.4%) or as many as 220 elementary school teachers have never used SAC products, and may even have seen and heard the term SAC never. The unprecedented size of the presentation prompted the researchers to introduce SAC to teachers to be used as a learning medium. People who have used SAC products can use homemade SAC products or they can also use existing ones, which have been made by others. Some researchers have succeeded in developing SAC into an interesting learning medium for various fields of study at various levels of education (Jamil, Widyanto, & Nurbayani, 2023; Fahri, 2020; Mussofia, Khoirunnisa, Syintia, Huda, & Rahmawati, 2023; Fauziah, 2022; Elviana, 2022; Hamidah & Nisa, 2022).

Table 8. Recapitulation of the Desire to Know Smart Apps Creator (SAC)

No	Item Pertanyaan	% Answer				Sum
		desperately want	want	Ordinary	don't want to	
1.	Do you want to know about SAC	32	64	4	0,4	100
Category		Less than half	More than half	a small part	No one	

Because most of the participants had no experience with SAC, either hearing the term, seeing or using it, they wanted to know more about what SAC was. This curiosity encourages elementary school teachers to learn and learn what SAC is. This desire is a motivation to improve their knowledge and skills in the use of technology in learning. Many teachers who are vulnerable (55 years old) experience difficulties in using technology in learning (Pertwi, Kumala, & Iswahyudi, 2021). These difficulties occur due to limited knowledge or because they are not used to using technology in learning

4. Conclusion

Based on the results of research and data analysis, it can be concluded that 1) more than half of elementary school teachers have known learning media in the form of android applications but less than half have never made android applications, so it is necessary to improve the technological capabilities of teachers. 2) A small number of elementary school teachers already know and have used the Smart Apps Creator (SAC) application, meaning that most of them do not know and have never used SAC.

Based on this conclusion, the implications are: 1) it is very necessary to provide training to elementary school teachers to make learning media in the form of android applications 2) elementary school teachers need to improve their knowledge and skills in using and making learning media in the form of android applications, especially SAC-based. Through these conclusions and implications, it is suggested: 1) to researchers to be able to develop more SAC-based android application learning media, so that it can be easily used by elementary school teachers who are not able to make their own media, 2) to elementary school teachers in order to improve technological capabilities in learning, so they are always motivated to innovate learning by making technology-based learning media.

Author Contributions

All authors have contributed to this research

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Declaration of Conflicting Interests

Declarations of interest: none.

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