

The Development of an Integrative, Collaborative Model of Counsellor and Parent Based on Android Technology to Reduce Student Learning Problems

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The challenges of rapid technological development require an educational pattern in the form of a curriculum that is adaptive to these changes. Educational success will be indicated through the ability of students to master the subject matter, the ability to face the challenges of the times, have a successful social life, and career preparation by following the stages of development. This success will be generated through counselling services that are also successful in schools. However, the study conducted by the author shows the process of learning activities in schools is not optimal, and the selection of study programs is not appropriate in students' continued education. This study aims to develop an integrative, collaborative model of school personnel with parents to optimize student learning processes based on Android technology. This research is development research using the ADDIE model approach. This study involved 142 counsellors and 150 parents of high school students. The research data was analysed using the Kendall concordance suitability index and Rasch analysis. The results showed that the integrative collaboration model using Android technology was effective in enhancing the counsellor's collaboration with parents to reduce student learning problems, especially concerning the difficulty of understanding material and achievement motivation.

Keywords: *counsellor collaboration, parents, Android technology.*

Introduction

The dynamics of education in Indonesia currently refer to the formation of a golden generation in 2045 and responds to the challenges of technological change quickly and adaptively (Agus, Cahyanti, Widodo, Yulia, & Rochmiyati, 2020; Munardji, Kholis, & Mufidah, 2020; Sasongko & Widiastuti, 2019). To address challenges, various efforts have been made, one of which is

the development of a curriculum that supports these ideals. Indicators of the importance of curriculum development and adjustments are seen in various aspects, including content adjustment, the achievement of graduate competencies, or in the implementation of learning processes that lead to and adjust to scientific and technological developments (Hendra, Mukminin, Tersta, Priyanto, & Nurhuda, 2019; Syawaludin, Gunarhadi, & Rintayati, 2019; Wisnalmawati, Huda, Ningrum, & Lukiyanto, 2019).

Development efforts relating to the optimization of learning activities experience various obstacles. For example, almost every year indicates that the results of student achievements, especially for high school level, still need optimization. Likewise, concerning the implementation of examinations, there are still problems that need to be studied that can be thought-provoking and lead to further improvement. In various aspects and levels of education the implementation of cheating and other irregularities such as in the form of leakage of questions, cheating on each other, and giving answer keys to the examinees has been observed. To enter college, there is a jockey system (Kardoyo, Pitaloka, Rozman, & Hapsoro, 2020; Ramadhan, 2019).

Various research findings also imply the importance of these development efforts, among others based on research conducted on all high school students throughout West Sumatra. This research shows that the learning culture that is adopted is related to learning activities that show low-quality achievements. Namely, students not studying the material before the learning process is carried out and students not studying the subject matter when the teacher is absent. Students do not learn the material deepening exercise even though the teacher is not assigned. Other findings indicate similar issues = have an impact on the planning and preparation of a further study of students in tertiary institutions. The result shows that more than 60% of students did not get complete information about the department they are currently in and more than 32% of students want to change majors in the first year (Zadrian Ardi, 2017; Daharnis, Erlamsyah, Ardi, Ifdil, & Hariko, 2014; D Daharnis et al., 2018; D. Daharnis, Ardi, & Ifdil, 2018).

The phenomena and problems of student learning and self-development should be prevented and anticipated effectively and efficiently through improved counselling services through collaboration between school personnel and parents of students among other services. Integrative and comprehensive collaboration is needed to oversee academic achievements and develop students' potential optimally (Daharnis & Ardi, 2017; Daharnis & Ardi, 2017; Ifdil et al., 2018). Additionally, collaboration requires a clear, systematic program so that achievements can be measured and evaluated on an ongoing basis.

Collaboration between school personnel and parents also requires that the collaborating parties use media that is accommodating, effective, efficient, and practical. For this reason, it is necessary to use technology as a liaison between these parties, namely by using Android

technology (Ardi, 2019; Ardi, Putra, & Ifdil, 2017; Ardi et al., 2019). This technology can be easily used by various parties who collaborate with the content because the collaboration content has been developed previously. Technology affiliated with the internet and the high variability of supporting platforms is one of the bases for the use of this technology for counselling services (Hines, Vega, Mayes, Harris, & Mack, 2019; Tadlock-Marlo & Hill, 2019; Witkowsky & Clayton, 2019). In addition, the demographic conditions that indicate the tendency of using this technology range in the productive age range, so this makes Android one of the most compatible technologies with counselling services, especially to support collaboration between personnel in counselling services.

Based on a study of the phenomena that have been described to optimize student learning activities, it is necessary to have an integrative model of cooperation between counsellors and parents to reduce student learning problems. The collaboration model developed is also integrated with Android technology in the form of application development that connects counsellors with parents of students.

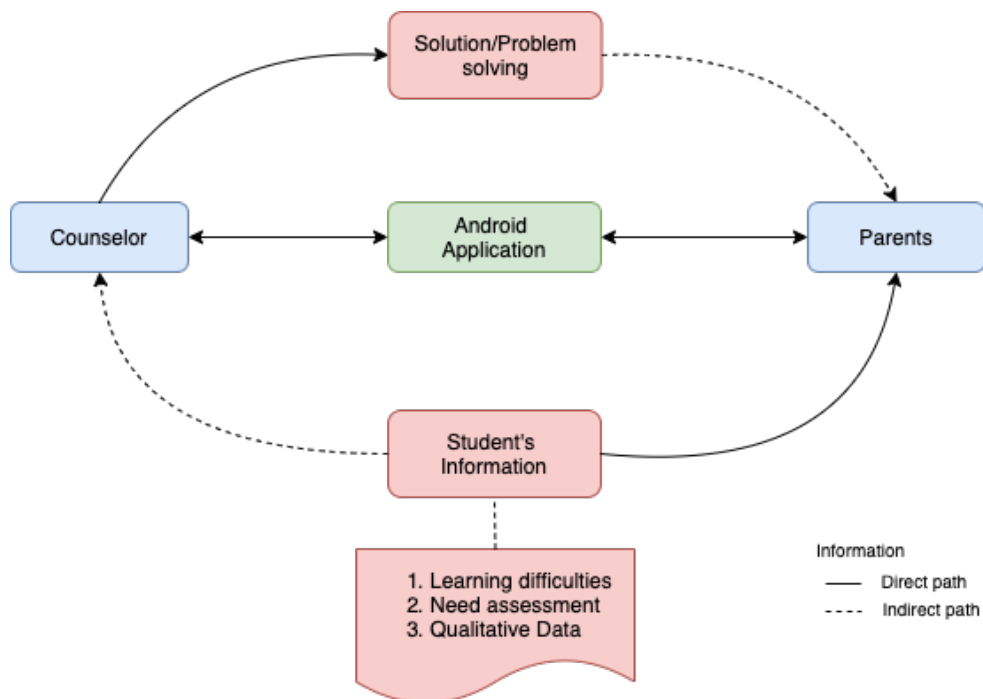


Figure 1. The model of Android technology-based integrative collaboration between counsellor and parent

Methods

Participants

This study involved 142 counsellors spread across the West Sumatra region. The counsellors involved in this research have completed professional counsellor education studies with work experience of over two years. Before being provided with a measuring instrument, the counsellor involved must complete the credential sheet and approval for data collection. This study also included 150 parents of students who were first asked if they would be willing to fill out a statement sheet for research purposes. The students' parents were chosen according to the representation of the school location where the respondent counsellor was assigned.

The sample size used as the basis for the measurement is based on the measurement of the power sample to avoid the occurrence of α and β errors. Based on the calculation of the power sample conducted, the minimum number of samples with actual power is 0.95, and the effect size is 0.82 in 95 respondents based on correlation analysis. With the amount of sample that has been determined in this study, the sample strength and statistical strength resulting from calculations have met the minimum requirements.

Measurements

Measurements in this study involved three types of instruments, namely DZ-MCI (Daharnis Zadrian Majoring Choice) to measure the general conditions of student learning regarding further studies and reveal the counsellor's collaboration with parents. The second measuring tool uses the Acceptability of Mental-Health Mobile App Survey (AMMS) to explain the conditions of acceptance of respondents (counsellors and parents) to the development of applications for integrative counsellors and parents based on Android apps. Furthermore, the third instrument used is the Model and Application of Counsellor Cooperation Inventory (MACCI) to reveal an index of compatibility between assessors (counsellors and parents) of the models and applications developed. Validation of measuring instruments uses Rasch analysis, which can explain the strength of items, accuracy in predicting bias, and measurement of outlier items. Based on the validation process of the measuring instrument, the Cronbach Alpha-KR20 value on the DZ-MCI is 0.91, and the validity value through the unidimensional value of 53.2%. The measurement of validity on the AMMS results in a Cronbach Alpha-KR20 value of 0.92 with a unidimensional value of 50.7% and leaves a variable that is unable to explain the instrument by 11.1%.

In comparison, the MACCI has a Cronbach Alpha-KR20 value of 0.86 with a unidimensional value of 51.67% and leaves an instrument that cannot be explained by an instrument of 11.1%. Variables that are not able to be explained by the instrument by 12.2%. The results of the

validation of the instrument prove that the instrument can be used as a tool to express conditions or attributes that will be measured through this research.

Data Analysis

The research data were analysed using several approaches according to the type and interpretation needed. To express the condition of the sample in the form of demographics, an analysis and interpretation were carried out using a descriptive statistical description. Meanwhile, to see respondents' acceptance of the models and applications developed, testing is done using Rasch Model analysis. This analysis procedure is carried out with the assumption that the Rasch analysis will accurately describe the achievements of respondents with lower error rates. Rasch analysis was performed using Winstep 3.72 Software. Furthermore, to analyze the respondents' agreement on the model and product developed, the Kendall concordance analysis is conducted. This analysis is carried out to find out the respondent's agreement coefficient on effectiveness and assumptions on the use of applications in the future more broadly.

Results and Discussion

This research was initially based on the phenomenon of the suboptimal role of counsellors in providing services to the process of selecting further studies by students in secondary schools. Initial research proves that the selection of further studies that are not appropriate is a manifestation of the learning process and counselling services that are not optimal in schools.

The suboptimal counselling service can be seen from the decision to choose further studies that are more dominated by the students and parents. In contrast, the more dominant counsellor is ranked fifth with the acquisition of a score of 702. This fact is coupled with the position of the subject teacher in the order of determining student decisions that are more important than the counsellor. It means that the counsellor has not shown excellent performance in providing services to students therefore it does not become a primary reference in making decisions. The conditions for determining the choice of further education can be seen in Table 1.

Table 1. Determination of higher education based on ratings

Determinants of Advanced Education	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Score	Rating
Student-Self	305	61	26	6	8	1867	1
Parents	77	225	45	37	15	1509	2
Relatives	17	40	141	55	77	855	3
Subject teachers	18	33	70	98	82	710	4
Counselor	18	34	69	87	95	702	5
Friend	10	26	54	94	90	594	6
Others	11	8	6	13	10	141	7

One of the strong assumptions that make the role of the counsellor not optimal in overseeing the needs of students in the form of further study and learning is the lack of collaboration between the counsellor and related parties (Amber & Martos, 2017; Roth & Fernandez, 2018). This research focuses on the form and model of the collaboration of counsellors with parents of students. This assumption is based on the condition that the cooperation of counsellors and parents in solving various student learning problems will lead to the effectiveness and efficiency of service, especially in gathering information and diagnosis process of learning difficulties of students.

However, the reality is that not all counsellors understand the urgency of such cooperation. It is proven by the fact that not all counsellors have guidelines and models that are valid and reliable in supporting the cooperation process. More than 50% of counsellors do not have guidance and models in carrying out the process of collaboration with parents to oversee and alleviate student learning problems (as in Table 2).

Table 2. The existence of a Collaborative Model between Counselors and Parents in Schools

Model	Total	%
Exist	70	49,296
Do not Exist	72	50,704
	142	100

Although less than half of the counsellors say they have guidelines and cooperation models, there is no truly valid and tested model to provide the primary basis for referring to the collaboration process and the relationship between the counsellor and students' parents. The model that the counsellor has is non-anticipative of student development, and there are no cutting-edge media in helping the collaboration process.

The non-optimal condition of the collaboration process can also be seen from the media meetings between the counsellor and parents of students, as in Table 3. The counsellor and parents of students only meet at special activities such as special meetings held at school

because there are certain activities (90.84% occur in sessions) and if the counsellor does a home visit.

Table 3. Media of cooperation and counsellor and parent meetings

No	Media	Score	
		Total	%
1	Special meetings (e.g., learning outcomes meeting with parents)	129	90,845
2	Discussion	72	50,704
3	Incidental	82	57,746
4	Case conferences	56	39,437
5	Social Media	60	42,254
6	Calling parents	100	70,423
7	Home visit	121	85,211

This fact has an impact on the non-optimal cooperation between counsellors and parents in exploring various learning difficulties. Moreover, various learning problems can be sourced from home, such as the unavailability of facilities, short study time, lack of supervision from parents, students' understanding of the material that requires deepening, and so on. Such information should be able to be conveyed to the counsellor, and then the counsellor can recap or compile supporting information so that they can intervene appropriately (Ningsyih et al., 2007).

Based on the findings and analysis of the respondent's data, it is necessary to have a model that forms the basis of counsellor collaboration activities with parents of students to alleviate learning difficulties and oversee the development of students' potential. The model should also accommodate technological developments and consider the time efficiency of its users. On this basis, an integrative collaboration model was developed between the counsellor and parents of students to reduce various student learning problems by using the Android technology base as a media liaison between the counsellor and parents of students.

With this model, the counsellor can gather complete information about students, such as student learning difficulties at home, study their needs, and collect qualitative data about the condition of students at home. The data can be provided by parents of students who are then processed and interpreted to do interventions related to student problems. Collaboration between counsellor and parents will also be able to improve the success of counselling services, especially related to student learning problems.

The use of Android technology as a media liaison between counsellors with parents is also an advantage in this model. The purpose of this technology is based on the high tendency and prevalence of the use of connecting media and is usually used by productive users. This

technology is also assumed to be a place for parents who want to continue to monitor the development of their children even if the conditions do not have much time and opportunity (Budiharto, Meliana, & Rumondor, 2017; Mirawati, Sugiana, & Wirakusumah, 2019; Nneji et al., 2019). Additionally, parents can contribute to completing information, documents, and other related information about students. With integrated collaboration through the use of Android technology, the accuracy of student information and the intervention plan for alleviating student learning problems will get optimal results (Furlonger et al., 2019; Shang, Wei, Jin, & Zhang, 2019; Zhao, 2018).

When viewed from the level of respondents' acceptance of the models and applications developed, in general, respondents gave a positive assessment of the model and application. Based on the Person-Item Variable Map measure the acceptability map of integrated cooperation between counsellors and parents' models and applications based on the Wright map from Rasch Analysis (the Person-Item Variable Map available on <https://osf.io/nq63b/>). Variable plans show that more than 60% of respondents have affirmative acceptance of the model. The results of data analysis also show that items are divided into two on both sides of the high and low acceptance models. It indicates how respondents react to favourable and unfavourable items. Items with a positive response rate are items that show high acceptance of the models and applications developed, and vice versa.

Furthermore, when seen from the counsellor agreement on the model developed through Kendall Concordance analysis in Table 4, it appears that the coefficient value shows at point 0.413 with a P-value (significance 0.01) at point 0.001. Obtaining these coefficients indicates that there is an agreement between counsellors in seeing the efficiency and effectiveness of the model as a basis for carrying out integrated collaboration to alleviate student learning problems. It indicates that the model can be used as a reference in building collaborations between counsellors and parents using Android technology.

Table 4. The counsellor and parent agreement index of the Android-based integrative collaboration model using the Kendall Concordance Test

No	Validator	Jumlah Item Pernyataan	Kendall's W	df	Asymp. Sig.
1	142	16	0,413	141	0,001

Conclusion

Problems of learning and self-development of students in principle can be overcome, prevented, and anticipated effectively and efficiently through improved counselling services through the cooperation of counsellors and parents. For this reason, it is necessary to have a model that becomes a forum for implementing these collaborative activities. Coupled with the development of technology that facilitates connectivity between individuals, the use of the



media will facilitate the implementation of cooperation between counsellors and parents using Android. This technology can be easily used by various parties who collaborate with the content and collaboration content that has been developed previously. Technology affiliated with the internet and high variability of supporting platforms are one of the bases for the use of this technology for counselling services. Additionally, the demographic conditions that indicate the tendency of using this technology range in the productive age range, so this makes Android one of the most compatible technologies with counselling services, especially to support collaboration between personnel in counselling services.

The results of the research revealed that the integrative model of counsellor collaboration with parents is needed, given the relatively rare conditions of an encounter between the two and the need for the role of parents in assisting counselling interventions. Research findings also reveal that the application developed has a high level of acceptance and positive ratings from respondents (counselors and parents). Kendall's Concordance Coefficient also revealed that there was a counsellor's agreement in looking at the effectiveness and efficiency of the model in a positive direction. It can be interpreted that the developed model has been tested in a limited group, and further research is needed to prove the efficiency and effectiveness of the model and its media in the broader sample scope.



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