

Designing Web-based Score Processing Information System

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Abstract. The purpose of this research is to utilize the development of internet and technology in Indonesia to be used better, especially in the field of education. The research used descriptive method to explain the information. The data collection divided into primary and secondary data. Furthermore, the system development method used waterfall method. Web-based information processing system must first follow the stages of system procedures such as system flowmap, context diagrams and data flow diagrams. The result of this research is this information system can be one of the options to actualize the utilization of technology in Indonesia especially in the field of education. So, it can be fully computerized and the score processing can be processed perfectly.

1. Introduction

There is a new phenomenon in the modern education system that the main strategy of this phenomenon is to improve the teaching or learning process called E-learning [1-2]. While Lau et al explains that e-learning technology is a virtual classroom technology on the Web, and every learning activity is done online such as teacher communication with students, communication among students, provision of subject matter and student ratings done online [3].

Ali and Beg define the web as a dynamic and diverse document [4]. While Baird et.al argues that if the assessment aims as one of the achievements of educational services [5]. Then the educational assessment will determine the formal aspects of learning [6]. This study is supported by the Hafen et al study which states that valid measurement of student experiences will lead to improvement in learning [7].

Research conducted by Ria et al found that the scoring system enabled teachers to make consistent judgments and provide normative ratings to students [8]. While research conducted by Choi et al in one of the secondary schools in Korea explained that current research centers on assessment to students who are more practically and validly developed and incorporate information technology and communication (ICT), so as to provide empirical evaluation results to a formative assessment system for students and teachers in secondary schools in Korea [9]. Saravanan and Arumugam explained that each school must be facilitated by a web-based assessment system so that it can enter data details whenever necessary, so as to assist the school in extracting data [10].

Therefore, this study was conducted to utilize the internet and technological advances in the field of education through processing the score of students who use the website as a medium to process value data and advance the school's academic system. By using descriptive method, primary and secondary data collection, and system development with waterfall method is expected to give result of a better information assessment system, by following stages of running system procedure, flowmap running



system, diagram of running context , data flow diagram running, proposed system design, proposed system procedure, proposed system flowmap, proposed system context diagram, and data flow diagram with the proposed system context and running system procedures. This study was also conducted due to the weakness of previous studies that have not yet explained the proper assessment system to be conducted in schools.

2. Method

This research used descriptive method to describe the event is happening. The data collection of this research is by collecting primary data and secondary data. Primary data were obtained from interviews of parties relating to the study of student score data and observation of the use of technology in schools while secondary data sources are obtained from studies related to the scoring system in schools.

3. Results and Discussion

3.1. Ongoing System Procedures

The system procedure in making web-based value processing information system starting from the creation of a list of scores that contain daily exam attendance, Mid test, and Final test that have been evaluated from the attendance and the score list documents by the teacher, for the next will be kept right into the curriculum. The curriculum creates two sheets of Ledger report cards from the list of scores then give them to the teacher. The teacher fills the ledger report with a value sourced from a list of previously evaluated scores, and will return the first ledger report to the curriculum. Then the curriculum will verify the ledger report and will be forwarded to the student to be archived. The teacher creates a master report that is going to be a student report card, the report card must be given to the principal for signing, and the principal signs the student's report card then returns it to the teacher.

The context diagram that runs on the flowmap of the running system is the overall data on the value of students that are stored in the online score information system that will be used by various related parties, such as teacher and principal (Figure 1).

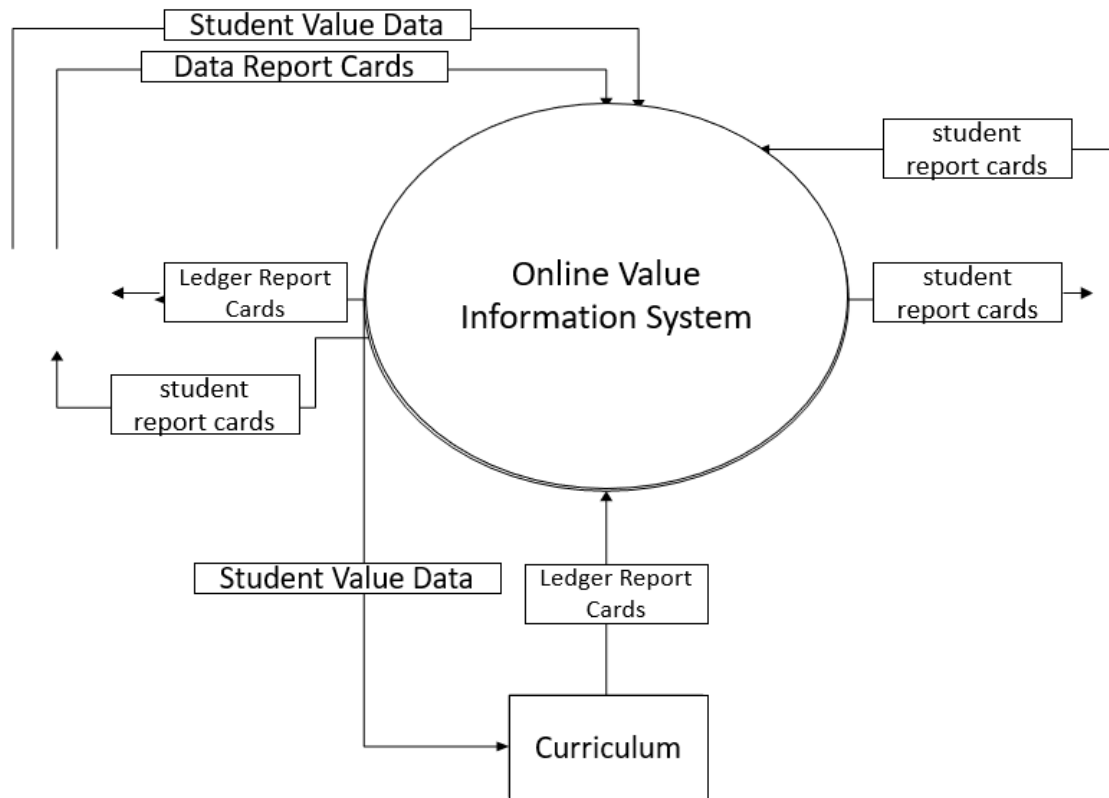


Figure 1. The ongoing context diagram

3.2. Recommended System Procedures

Due to the previous System Procedure that is too complicated, then it is proposed system procedure that starts from the teacher of the particular lesson to login to the online score website and input the student score data into the database. The curriculum will take the data to make the ledger report which is then given to teacher. The teacher will print the report cards by inputting the score data on the ledger report card and give the report card to the principal, finally the principal signs the student report card which is then returned to the teacher (Figure 3).

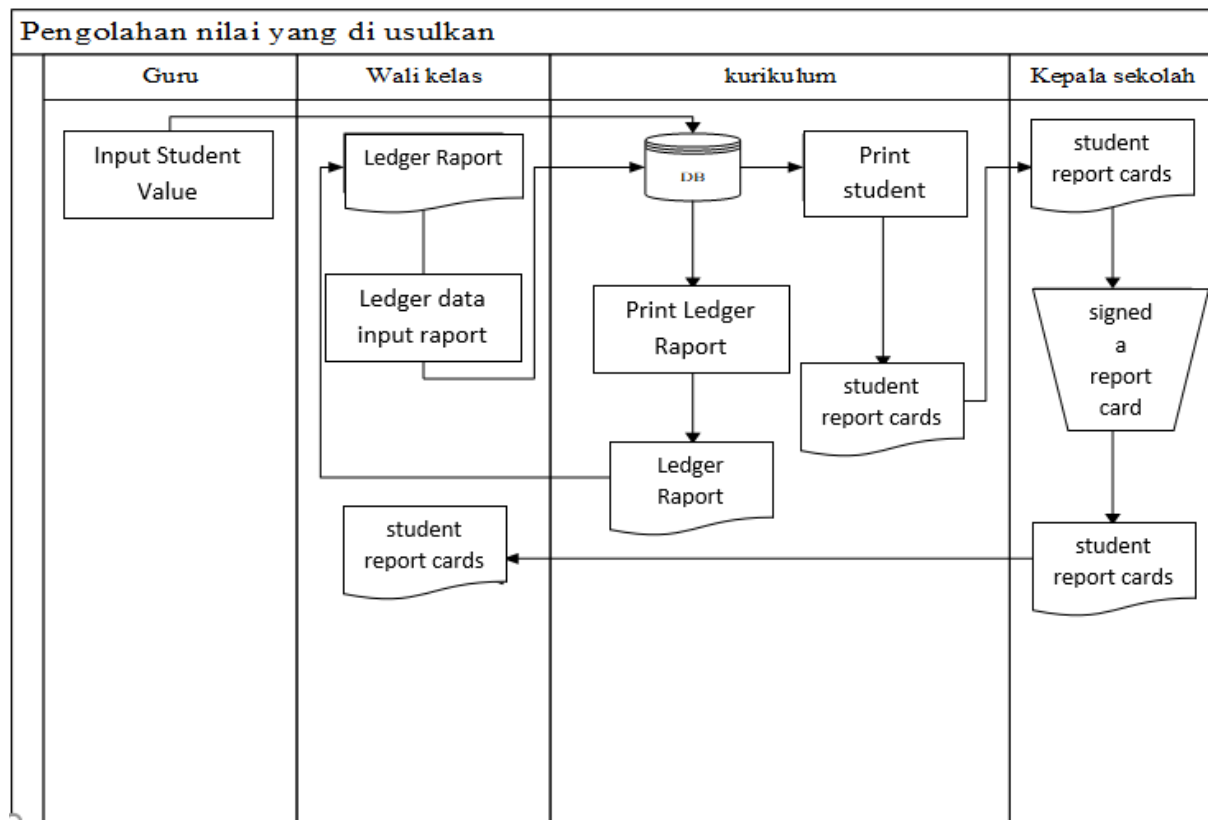


Figure 2. Flowmap of proposed system

The context diagram proposed in the proposed system flowmap is simpler than the previous system since the overall data on the student's score is stored in the score information system and the related party is only the teacher and principal (Figure 4).

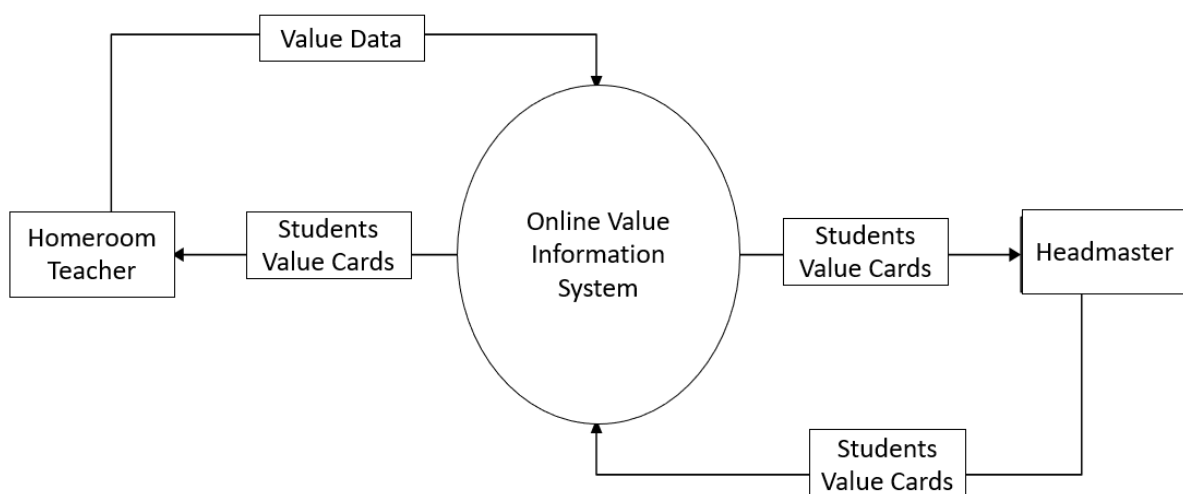


Figure 3. Proposed data flow

4. Conclusion

Based on the results of the research, the creation of score information processing system is needed in SMK, due to complicated assessment on the previous system procedure. The new system can be more effective and efficient in terms of time and accuracy of the assessment. This is also one of the first steps for the realization of technology in Indonesia in the field of education.

References

- [1] Hammouri Q, & Abu-Shanab E 2018 Exploring Factors Affecting Users' Satisfaction Toward E-Learning Systems. *International Journal of Information and Communication Technology Education (IJICTE)* **14**(1) pp. 44-57
- [2] Jalali S M J, Mahdizadeh E, Mahmoudi M R, & Moro S 2018 Analytical assessment process of e-learning domain research between 1980 and 2014. *International Journal of Management in Education*, **12**(1) pp. 43-56.
- [3] Lau R W, Yen N Y, Li F, & Wah B 2014 Recent development in multimedia e-learning technologies. *World Wide Web*, **17**(2) pp. 189-198 [4] Putra Z A 2016 Early phase process evaluation: Industrial practices *Indonesian Journal of Science and Technology* **1**(2) pp. 238-248
- [4] Ali R & Beg M S 2017 Introduction. In *Applications of Soft Computing for the Web* Springer, Singapore pp. 1-7
- [5] Singla B S, & Aggarwal H 2018 Evaluation of Indian universities' websites in terms of information quality: differences in the perspectives of end users segments based on their socio-demographic characteristics. *International Journal of Business Information Systems*, **27**(2) pp. 135-176
- [6] Baird J A, Andrich D, Hopfenbeck T N, & Stobart G 2017. Assessment and learning: Fields apart?. *Assessment in Education: Principles, Policy & Practice* **24**(3) pp. 317-350
- [7] Hafen, C A, Hamre B K, Allen J P, Bell, C A, Gitomer, D H, & Pianta R C 2015 Teaching through interactions in secondary school classrooms: Revisiting the factor structure and practical application of the classroom assessment scoring system–secondary. *The Journal of early adolescence*, **35**(5-6) pp. 651-680
- [8] Ria S, Cox M J, Quinn B F, Bakir, A, & Woolford M J 2018 A Scoring System for Assessing Learning Progression of Dental Students' Clinical Skills Using Haptic Virtual Workstations. *Journal of dental education*, **82**(3) pp. 277-285
- [9] Choi J, Kim H, & Pak S 2018 Evaluation of Automatic Item Generation Utilities in Formative Assessment Application for Korean High School Students. *Journal of Educational Issues*, **4**(1) pp. 68-89
- [10] Nandiyanto A B D, Permatasari N, Suchaya T N, Abdullah A G and Hasanah L 2017 Synthesis of Potassium Silicate Nanoparticles from Rice Straw Ash Using a Flame-assisted Spray-pyrolysis Method *IOP Conference Series: Materials Science and Engineering* **180**(1) pp. 012133 Saravanan, K., & Arumugam, M. (2017). Android Based Performance Assessment System for School Education. *Automation and Autonomous System*, **9**(2) pp. 25-30.