

Smart Daily Log Developed for Institutions for the Disabled

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Abstract

Child care institutions in Korea are required to do paper works for administrative purposes as the institutions have to draw, execute and evaluate plans to provide child caring services. Such documents include a service plan, a daily log and an evaluation sheet. Most institutions spend lots of time to write out the papers manually. This study is to help the institutions prepare the documents digitally, and analyze them to automatically recommend customized service for each individual child. The daily log service developed as a result of this study allows its users to keep the records online, and analyzes the daily log to come up with measures to improve daily log system. The daily log service has been used since 2009 in institutions for the disabled. A daily behavioral log as a result of analyzing daily log is written mostly at 8:00; while a daily child caring log is written mostly between 16:00 to 17:00. It takes 24 minutes and 32 seconds to prepare a daily child caring log; and 15 minutes and 3 seconds, for a daily behavioral log. Given that working hours are eight hours per day, 6% out of the working hours is spent on preparing the behavioral daily log. The share of time spent on paper works drops significantly.

1. Introduction

Child caring or residential service for the disabled is provided at least one hour a day, or around the clock. The results of the service are reflected in drawing up a monthly or weekly service target so that the service is provided according to the targets. After the service, its record are kept and analyzed based on a daily log, or an evaluation on service plan. Child caring service refers to drawing up, executing and evaluating a service plan¹. Child caring institutions are evaluated for their facilities and service^{2,3,4}. The results of the evaluation are critical indicator showing the level of service provided by each institution. For the evaluation, all child care institutions should do administrative paper works—like a service plan, a daily log or an

evaluation sheet—to keep records of planning, executing and evaluating service plan⁵.

Most child caring institutions in Korea prepare the documents manually, spending hours not on child caring but on paper works. Moreover, documents written manually are hard to be kept and analyzed. This study, therefore, is to develop system that can help the institutions do paper works digitally as well as analyze the papers to automatically recommend customized service for individual child.

2. System Structure

This study develops smart digital daily log system usable in a child caring facility for the disabled or a residential facility for the disabled to help efficient paper works and

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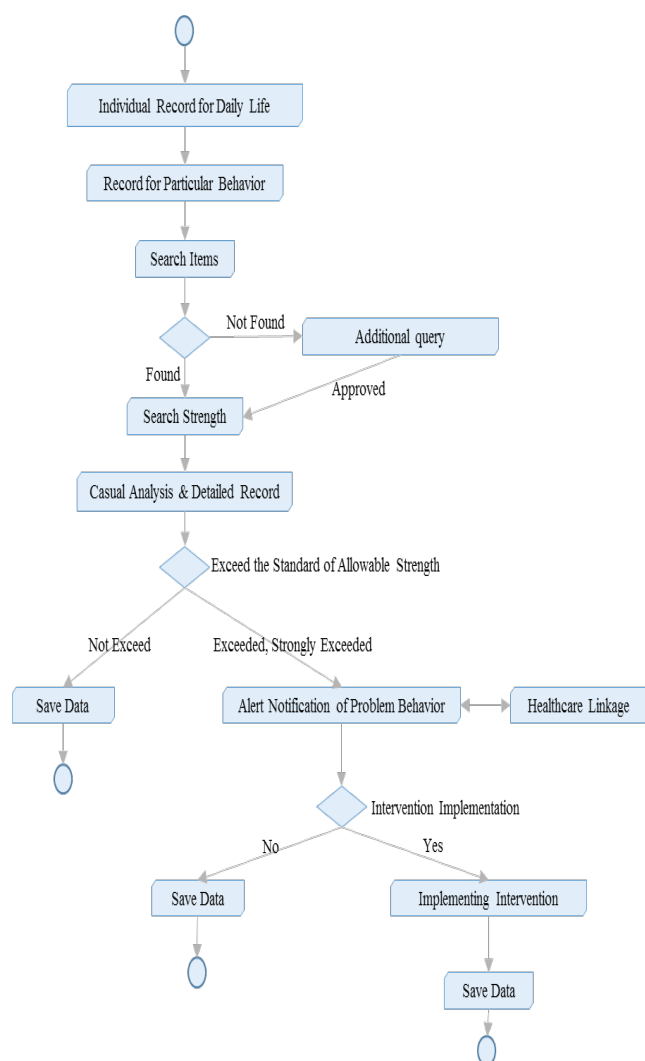


Figure 1. Flow diagram of daily log system.

their analysis as required for child caring service for the youth with disabilities⁶.

The system supports seven tasks:

- 1) daily life support provided by analyzing daily log;
- 2) education/treatment to support education programs;
- 3) diagnosis/assessment to assist disabilities diagnosis;
- 4) linkage to medical service;
- 5) administrative supports to enable electronic approval by institutions;
- 6) Homi Town to support an online community; and
- 7) Homi Training Institute to provide trainings relevant to aid for the youth with disabilities⁶.

The daily log system keeps records of daily log and analyzes it to come up with measures to further improve daily log system as a whole. The system works as follows: particular behavior of a child is recorded based on a daily log; and, if needed, programs are automatically provided to address the particular behavior

displayed by the child. The flow diagram of the daily log system is described in Figure 1.

3. System Implementation and Usage Analysis

The digital log system provides two input mode: one for a daily child caring log usable in a child caring institutions; and the other for a daily behavioral log to be used in a residential facility. The input displays are described in Figure 2.

Figure 2. Input display for daily child caring log and daily behavior log.

날짜	2012-12-19
표출 행동	사람 - 공격성 - 친구를 주먹으로 때린다.
주요인	회피
원인분석을 위한 코멘트	친구가 과자를 달라고 조르는 상황에서 과자를 훔쳐가자 친구를 주먹으로 때림
강도	아주심함
빈도	1회
지속 시간	3초간
시간대	16시:0분~17시:0분

Figure 3. Individual detailed record page from digital daily log.

In case there is particular behavior from a daily log to be addressed, programs are automatically provided for that matter. The programs are pre-written in the system; and relevant programs are extracted and provided if the behavior is observed in a daily log. Figure 3 shows when a single record from the daily log system of a teacher is

extracted out into a record of a child. The analysis result of the single record of a child is as shown in Figure 4. Programs to address particular behavior of children are shown as in Figure 5.

The digital daily log system is developed to be usable not only on webpage but also on mobile devices whose



Figure 4. Analysis of digital daily log.

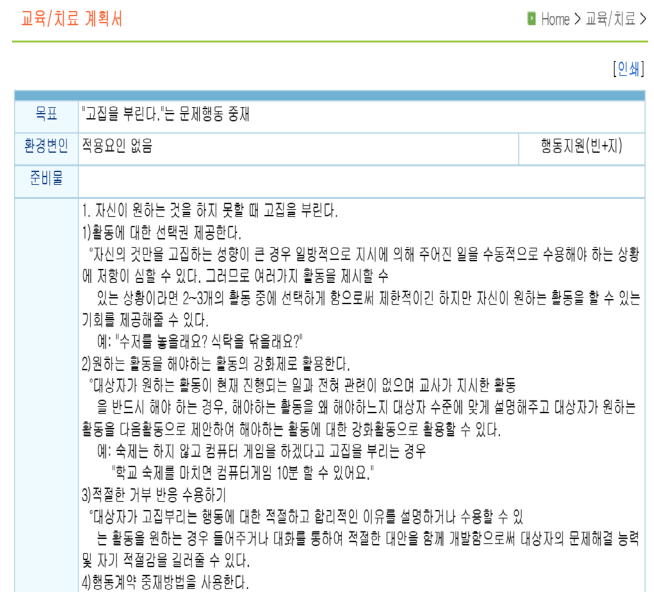


Figure 5. Program to address particular behavior after analysis of digital log.

Table 1. When digital log being written

Daily Behavioral Log				Daily Child Caring Log			
Time	Share(%)	Time	Share(%)	Time	Share(%)	Time	Share(%)
0	1.9	12	1.7	0	3.8	12	2.2
1	1.0	13	3.1	1	1.9	13	4.5
2	0.5	14	3.9	2	0.8	14	4.0
3	0.3	15	4.0	3	0.4	15	8.0
4	0.3	16	4.6	4	0.4	16	12.6
5	0.6	17	4.4	5	0.6	17	11.1
6	1.0	18	4.5	6	0.9	18	4.6
7	5.7	19	5.6	7	1.4	19	3.1
8	13.3	20	7.3	8	4.2	20	4.3
9	6.8	21	9.2	9	5.8	21	5.6
10	5.0	22	7.0	10	4.2	22	5.9
11	3.8	23	4.3	11	3.7	23	5.9

web address is <http://homi.info>. The system, since 2009, has been serviced for institution for the disabled. According to the date gathered from the usage records, it is found that a daily behavioral log is written mostly at 8:00 while a daily child caring log is prepared mostly at between 16:00 and 17:00. It takes 24 minutes and 32 seconds to prepare a daily child caring log; and 15 minutes and 3 seconds for a daily behavioral log.

Table 2. Time spent on writing digital log

Type	# of Log	Time on Average
Child Caring Log	1,400	24m 32s
Behavioral Log	5,085	15m 3s
Total	6,485	17m 6s

4. Conclusion

Child caring institutions in Korea are required to do paper works for administrative purposes, which include service plan, a daily log and an evaluation sheet. Most institutions spend lots of time to write out the papers manually. This study is to develop system to help the institutions prepare the documents digitally, and analyze them to automatically recommend customized service for each individual child. According to the usage records of the developed system, a task—of doing paper works—which accounts for 6

% of the work load becomes more effectively conducted, consuming less time given the daily working hours being eight hours. As paper works consume less time, institutions can focus more on providing quality service.

5. References

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