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PERFORMANCE CHANGE WITH OR WITHOUT ITEI APPS

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Performance Change with or Without ITEI Apps (Conference Paper)

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Abstract

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Performance of teachers is largely determined by how the teacher performs all tasks and responsibilities in the form of professional behavior. Because the teacher is an adult and as a professional who cannot be handled by just anyone, then teachers should be able to assess and improve their own performance to achieve the best. To be able to assess and improve their own performance at any time, it is the necessary application of early detection of teacher performance which is named »Indonesian Teacher Engagement Index (ITEI) apps«. This study aims to present the design of ITEI Apps that is able to assist teachers in controlling their performance condition, thereby impacting on performance improvement. The research uses neuroresearch method and enriches the application design as one of the decision support system which has four main parts namely integration, implementation, intelligence, and innovation. Results of ITEI Apps can recommend how a person should act, so as to improve the performance of individuals and organizations. © 2018 IEEE.

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Performance Change With or Without ITEI Apps

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Abstract Performance of teachers is largely determined by how the teacher performs all tasks and responsibilities in the form of professional behavior. Because the teacher is an adult and as a professional who cannot be handled by just anyone, then teachers should be able to assess and improve their own performance to achieve the best. To be able to assess and improve their own performance at any time, it is the necessary application of early detection of teacher performance which is named "Indonesian Teacher Engagement Index (ITEI) apps". This study aims to present the design of ITEI Apps that is able to assist teachers in controlling their performance condition, thereby impacting on performance improvement. The research uses neuroresearch method and enriches the application design as one of the decision support system which has four main parts namely integration, implementation, intelligence, and innovation. Results of ITEI Apps can recommend how a person should act, so as to improve the performance of individuals and organizations.

Keywords—ITEI Apps, Neuroresearch, Performance Change

I. INTRODUCTION

One form of self-actualization for a teacher seen from how the resulting performance of the profession he lived. And teacher performance measurement greatly impacts on teacher effectiveness in the future. Appropriate measurements will be able to evaluate teacher competence and readiness especially when faced with changes [1]. One study even found that teachers became more productive after being evaluated and the various teacher performance measures were a rich source of information that could be used as the basis for decision-making for the individual itself or related institutions [2].

One of the dimensions measured in ITEI Apps is how the performance of teachers in carrying out their profession as part of the realization of teacher engagement on self and its work [3]. This is very important because individual performance will have a broad impact on improving organizational performance, in this case, the educational institutions where teachers work [4].

ITEI Apps is based on the concept of self-management and initiative because it considers the teacher as a mature person who is able to conduct a personal assessment of his or her

condition. ITEI Apps is designed using android based applications so teachers can access anytime and anywhere easily [5]. Android as part of a smartphone has made an individual's daily life depends on the existence of this phone [6]. So ITEI Apps is present so that teachers can benefit from this dependency.

In previous research, ITEI Apps was designed as a decision support system for the Indonesian government to improve the quality of education [7]. However, ITEI Apps is also designed to be an individual decision support system. So the teacher can independently control and monitor its performance through this application.

II. LITERATURE REVIEW

A. Performance in ITEI Apps



Fig. 1. Sample Questions in ITEI Apps

Governments and educational institutions are now investing a wide range of programs for human resources in order to improve their performance. Performance measurement processes are usually done individually [8]. Performance is fundamentally related to what the individual does and the quality of the assigned task optimally [9]. In general, performance is defined as an overall behavior and an important activity in a population to meet organizational or institutional goals [10].

This concept underlies the selection of a special dimension in ITEI Apps, which is a good performance. Teachers are said to engage in the work if it has a good performance that can be seen from four indicators, namely:

- Task performance, as measured by several behaviors that demonstrate the ability to fulfill the main duties and responsibilities of the teacher. Task performance is often equated with the term core technical because it involves doing list that must be filled every day [10], [11]
- Contextual performance, as measured by several questions concerning behaviors that indicate individual policies although not included in the official duties and responsibilities listed in the teacher job desk. Meaning that included in this indicator is a voluntary behavior that has a positive impact on teacher performance so often called organizational citizenship behavior [12], [13].
- Counterproductive work behaviors within ITEI Apps are included in some of the questions that refer to how ineffective behaviors impact on teacher performance. Counterproductive work behavior usually affects the emergence of negative feelings in teachers [14], [15]
- Adaptive performance, as measured by several questions that indicate teachers' ability to deal with change and retaining their performance [16].

B. Decision Support System

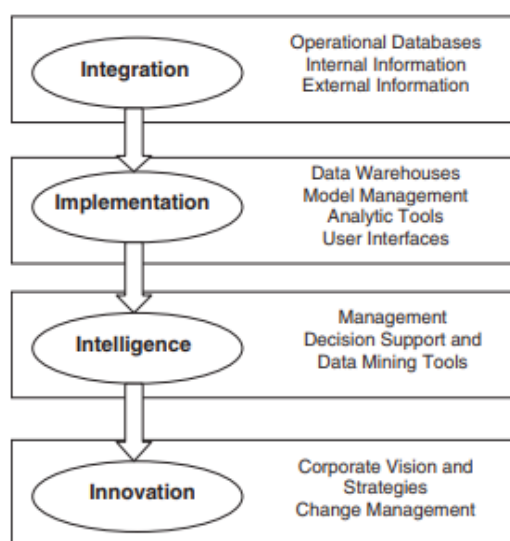


Fig. 2. Themes for data warehouse support of management decision-making [18].

Decision support system is one of the areas in information systems that focus to support decision making both personally, group or executive. In its development, the DSS became an important concept especially in the field of education [17].

Each system has a design strategy that becomes the basis of the purpose of why the system is developed. In a study that presents the concept of DSS, the effectiveness of using data to support the realization of DSS through four main things is integration, implementation, intelligence and innovation [18].

III. RESEARCH METHOD

The research method in this paper is Neuroresearch, a mixed method that collaborates exploratory research, explanatory research and confirmatory research [19], [20]. The research method also involves IT system design which includes server design, database and android ITEI application display [5], [7].

IV. RESULT AND DISCUSSION

With reference to the developed model [18], ITEI Apps in monitoring teacher performance can be viewed through four main points:

A. Integration

Integration describes how the design of ITEI Apps is able to collaborate all data comprehensively so that this integration can impact on the exact decision generated by the application. Integration involves the operation of data, external as well as internal information.

When teachers fill out ITEI Apps, the teacher will fill in the complete identity and relate to the identity number listed on the ministry's website of education and culture.

This shows the integration between ITEI Apps and the existing database in the government of the Republic of Indonesia. With this complete identity field, the database built in ITEI Apps will also be more comprehensive.

B. Implementation

Implementation involves how ITEI Apps design and evaluation of ITEI Apps infrastructure and DSS interfaces. What needs to be considered in the implementation is how to guarantee the quality of data, security, privacy and system performance built.

The concept of security built into ITEI Apps utilizes a single identity number in accordance with the identity of registered teachers in the government. So as to minimize the application will be used by different individuals.

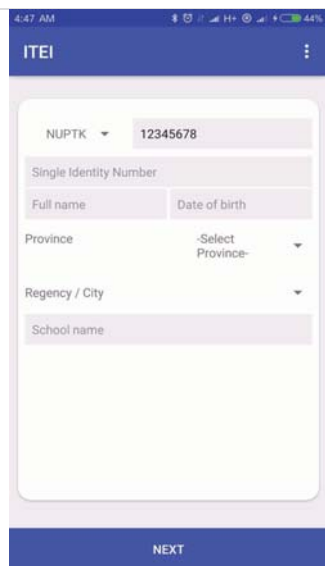


Fig. 3. ITEI Apps Identity Number

C. Intelligence

Intelligence involves the ability of ITEI Apps to present supporting information that is the result of interpretation of the resulting data so that the user can do something on the description of the results provided by the application.

In detail, ITEI Apps will present an overview of teacher performance based on the indicators included: task performance, contextual performance, counterproductive work behavior and adaptive performance.

Overall ITEI Apps will present a comprehensive interpretation of the results of all dimensions and categorize teachers into the engagement level according to the number of scores generated.

The score obtained based on 10 instruments and 4 models of answers, so that obtained 7 models of inference. Some question in ITEI instruments can be seen below:

1. I am a sincere person
2. I encourage others to get achievement
3. I always guide students to develop spirituality
4. I place the interests of the nation above personal interests
5. I am willing to be a teacher all over Indonesia
6. I serve unconditionally
7. I always have initiative to optimize the learning process
8. I am always respectful to others
9. I monitor the progress records of each student
10. I use technology to maximize learning

The 4 models of answers are:

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Then 7 models of inferences can be seen in table 1 and how to get the conclusion can be seen in table 2.

TABLE I
 ASSESSMENT CRITERIA

Inference of Instrument	Description of Profiling
Disengagement	Teacher profession is not internalized within itself, eroded and shows apathy
Frustrated	Teacher profession makes teachers frustrated
Burn out	Teacher profession is tiring physically and psychologically
Dependent Engagement	Independently, the teacher is able to interpret his profession as a condition that must be united in itself
Self interest engagement	Teacher profession starts to be internalized and becomes an interesting thing to implement
Critical engagement	Teacher professions are understood in depth in every aspect of life
Fully engagement	Teacher profession has been internalized as a shared value and intact within itself as a whole

TABLE II
 HOW TO GET ASSESSMENT CRITERIA

Inference of Instrument	Selection of Answer
Disengagement	Teacher chooses all answers strongly disagree
Frustrated	Teacher chooses answer strongly disagree as much as 50%
Burn out	Teacher chooses answer strongly disagree as much as 25% and disagree as much as 50%
Dependent Engagement	Teacher chooses the answer disagree and agree, in total 75%
Self interest engagement	Teachers chooses answer agreed as much as 50% and strongly agree as much as 25%
Critical engagement	each chooses answer agree as much as 50%
Fully engagement	Teacher chooses all the answers strongly agree

D. Innovation

Innovation is the core competency of the application that is able to guarantee the continuity of applications to improve the performance of individuals and organizations.

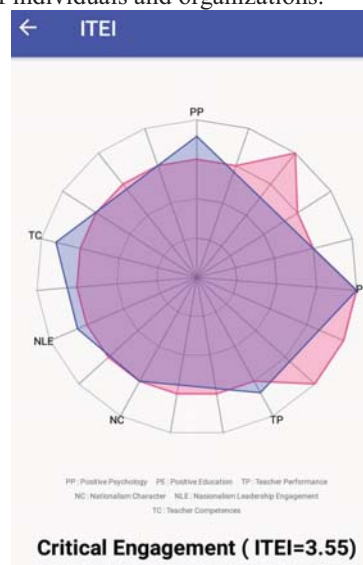


Fig. 4. Level Engagement

V. CONCLUSION

The design of ITEI Apps as an easily accessible application for teachers as well as outcomes capable of mapping the condition of teachers is an innovation in education that aims to improve teachers' performance as individuals because teachers are a major milestone in the development of quality education. Teachers can independently self-assess to know the current state of affairs they are experiencing.

This is very important so that teachers can directly make efforts to improve performance so as not to negatively impact the decline in performance they experience against students and institutions.

The advantages of using ITEI Apps versus without using ITEI Apps are in the automation section, where ITEI Apps has an intelligent system that can analyze teacher engagement quickly and user can see directly after filling the required data, while without using ITEI Apps, the psychologist should analyze it manually and take a long time and shown manually.

ACKNOWLEDGMENT

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