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The Character Building of Prospective Science Teachers Through A Conservation Coaching

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Abstract. The study aimed at assessing the characters of prospective science teachers after joining a coaching as conservation cadres. The research target was 276 Integrated Science Education students of different enrolment years ranging from the academic year of 2017, 2016, 2015, and 2015. This study employed the qualitative method by analyzing the students' character assessment results conducted online. The results showed that all the 276 prospective science teachers habituated a pre-lecture praying session, high level of discipline during lectures, polite attitudes, paper-saving, tree-planting, and a proper garbage disposal. Therefore, it concluded that the coaching pattern was effective to instill the conservation values.

1. Introduction

All new science students or prospective science teachers of Universitas Negeri Semarang have been named as conservationists. This label is delegated due to university's conservation-based visions. The knowledge has been taught since the first semester through Conservation Education and sustainable conservation coaching. The coaching includes lectures, tree plantation activities, waste processing movement, paper reduction through the empowerment of electronic system, habituation of praying session, conservation-themed community service, and the formation of new conservation cadres. Each prospective science teacher receives conservation cadre coaching that is not obtained by students of other universities.

Preliminary study carried out by conducting tracer studies and limited interviews with employers about the expected performance of alumni revealed that they expect agent of changes in environmental governance who could inspire students school community, play active roles in preserving cultures and noble values, possess a strong character, and are able to deliver schools to achieve the academic success-based conservation. The employers highly expected to employ prospective science teachers having conservation specifics as the virtue of UNNES. The preparation of science teachers cannot be separated from the knowledge of culture and ethics [1]. The prior study has also illustrated the challenges in educating competent as well as conservation-insightful prospective science teachers.

The cultivation of conservation values to prospective science teachers developed by Universitas Negeri Semarang has been the main excellence of science education graduates. The demands of various field integration including environmental values in learning have currently strengthened [2-3]. The developed conservation as a perspective and attitude orients to the maintenance, protection, preservation, and development of natural resources and socio-cultural values. The evolved conservation boundaries comprise not only the environmental aspects but also characteristic and culture aspect so that it is very relevant to the preparation of conservation-minded prospective teachers. This research was brought from the analysis of the employers' needs. Thus, it required to prepare prospective science teachers to have



certain specifications or advantages that are not developed in other institutions; also, construct appropriate guidance to result in competent and characterized graduates.

Referring to the research done by [4] there is a strong relationship between students' achievement and character, those having a strong character owned a more diligent and unyielding learning culture so that they obtained a great chance of gaining achievement in popular fields. A programmed student coaching has an impact on developing soft skills. The personal power of prospective teachers is very closely related to the Indonesian people who aspire to a great civilization. Inversely, it is nearly impossible for a weak-characterized teacher to result in smart and noble students. Conversely, a strong-characterized teacher will impact on the positive character building to students.

Teacher education has a huge role in preparing a future golden generation of Indonesia [5]. The birth of the golden generation in the millennial era emerges a big challenge in preparing a generation that firmly holds culture yet technology-literate. The result of [6] study informed that the millennial generation has a high dependence on other parties and technological devices yet lower independence. Therefore, it requires to strengthen their characters. A big challenge in preparing prospective teachers born and raised in the millennial era is to turn their habits and dependence on information technology into a power as stated by [7] that technological dependence might be used as a force to shape the character of the younger generation.

The analysis of character building coaching model for prospective science teachers by [8-9] showed that the environmental loving character building for prospective teachers has a broad impact on their viewpoint of preparing an environmental-based learning. The coaching could be implemented through a habituation during the study time so that the improvement will be easily assessed due to sustainable refinement coaching model [10]. [11] found that complaints on teachers' unworthy contribution to school environment quality indicate that there is a problem on future teachers' education. Meanwhile, the unprogrammed character building will never result in a broad impact either for the future teachers themselves or their future workplace [12]. The problem studied in this research was the coaching model of prospective science teachers as conservation cadres. The character building was the main research focus as it is a strategic function for them in teaching their future students.

In accordance with the analysis of previous research results, this study intended to assess the prospective science teachers' characters after joining a coaching. This research limited to the assessment of conservation-related characters internalized in the form of coaching. There were seven characters scored which included: (1) piety, through the habituation of pre-lecture praying session; (2) disciplinary; (3) contribution to culture preservation; (4) politeness; (5) paper-saving; (6) environmental caring through tree planting activity; (7) proper garbage disposal. The assessment of those seven characters was the follow up for the employers' needs revealed during the pre-research activity.

2. Research Methods

This study employed the qualitative method. The research stages began with the preparation of manual and online assessment system integrated with the students' supervision system. The next stage was the development of the prepared assessment system. Then, the assessment of the students' characters was carried out and continued with the analysis of the results. The research target was 276 UNNES students of different enrolment years ranging from the academic year of 2017, 2016, 2015, and 2015. All the targets also acted as the research subject so that intact data were obtained [13]. The study was carried out in 6 months starting from April to September 2018. The adopted research stages referred to the quantitative research design according to proposed by [14] which consists of preparation, implementation, and evaluation.

The research preparation initiated by the arrangement of character assessment instrument which was integrated into the online system called SIBIMA (Students' Supervision System). An interview was also performed to deepen the information about each student. The SIBIMA system measures general character aspects filled by the supervisors (lecturers). The measured characters comprised; (1) piety, through the habituation of pre-lecture praying session; (2) disciplinary; (3) contribution to culture preservation; (4) politeness; (5) paper-saving; (6) environmental caring through tree planting activity; (7) proper garbage disposal. After all the required data were obtained, the evaluation was performed by confirming the research results and lecturers' scoring results.

The data collection technique employed in this study was the instrument validation of by education experts. The expert validation results were analyzed to determine the instrument's feasibility level. The feasible instruments were then used to assess the students' characters, which were analyzed descriptive-qualitatively to be categorized as very good, good, fair, and poor. The final score was acquired by calculating each student's correct answer with the total number of students multiplied by 100%.

3. Results and Discussion

This research began with developing a guidebook of student character assessment as an academic text. The guidebook cover is presented in Figure 1.



Figure 1 The Guidebook Cover for Student Character Assessment

The book was the basis for developing student character assessment instruments which then validated by the experts. The instrument validation results are found in Table 1.

Table 1 The Results of Instrument Validation

The Validated Elements	Category (Score)	
	Very Feasible (3)	Feasible (2)
Format	√	-
Compliance with the assessment guidelines	√	-
Font Clarity	-	√
Proper and understandable terms	-	√

The determination of the instrument feasibility level was carried out by comparing the scores given by the experts with the total score. The score calculation resulted in 10 of 12 and the percentage was 83%, which means that the instrument was feasible. The research results of the students' character assessment are presented in Table 2.

Table 2 The Results of the Students' Character Assessment

Characters	The number of students (Score)	
	Very good (4)	Good (3)
Joining the pre-lecture praying session	276	-
Disciplinary in lecture	249	27
Contribution to culture preservation	92	-
Politeness	208	23
Paper-saving	247	29
Participating in the tree planting activity	276	-
Proper garbage disposal	196	32

Based on the obtained data, not all future science teachers scored 3 and 4 as three aspects' total score average was under 3. All of them have joined the pre-lecture praying session and tree planting activities, most of them have also behaved politely while only 92 of 276 students contributed to cultural preservation.

The interview results with the eight lecturers obtained the information about students' character building coaching as presented in Table 3.

Table 3 The Interview Results with the Lecturers and Future Science Teachers

Questions	Lecturers' Answers
Do the students have a pre-lecture praying session?	All of them have a pre-lecture praying session. It has been one of the habitual activities proposed by the faculty.
What about the attendance percentage?	Very good. Each meeting achieved 95% attendance averagely.
Do the students contribute to cultural preservation?	A small percentage of them are actively involved in preserving culture.
How do the students behave?	Greeting and smiling to campus residents has been a tradition.
What do the students do to save paper?	The assignments were submitted in a soft file via e-mail.
Did the students join the tree planting activity?	Yes. It's compulsory.
Do the students dispose of garbage properly?	They do. They throw garbage to the proper dustbin; the organic and inorganic.

The interview with the lecturers was to confirm and explore the assessment of the students' characters. The interview results revealed that the characters were built up through a programmed model which lead to the big success of piety and tree planting activity. This is line with [15] who stated that the habituation of positive characters towards future teachers will broadly affect the workplace they will go to. However, the students remained to lack of contribution to cultural preservation. The reason underlying the issue is the different interest and talent owned by each student so that not all of them are able to participate in it.

There is a special section of the developed guidebook of student character assessment talking in detailed about teacher characteristics, which comprises ethics, attitudes, and behaviors as a conservation-minded teacher. The explanation is quite peculiar since it integrates the conservation values. For instance, it elucidates that a teacher is responsible for preserving the environment and community with its tradition and culture through learning activities. In addition, it also points out teachers' important role as the agent of change. This is parallel with [16] who stated that each teacher must understand well the ethics to be the educator of the highest integrity. Similarly, [17] thought that ethics have been the primary part to be integrated into the curriculum. Thus, future teachers' education must not separate between knowledge and characters yet integrate both.

Referring to the employers' expectation that has been mentioned upfront, the researcher has tried to give the solution for that matter through the guidebook. The specification contained in the guidebook was developed into the assessment instruments which have been declared valid scoring 83%. The instruments' format, guideline, language features, and adopted terms are suitably employed to assess the future science teachers' characters. [18]

The assessment results highlighted the habituation of pre-lecture praying session since it is one of the conservation values developed by Universitas Negeri Semarang. Praying is believed to greatly impact a teacher's religious character as s/he will teach to do it to his/her future students. Other than that, the students got a high attendance percentage, 95% average for each meeting. This proved that they are aware of the importance of the course. This fact was also supported by the lecturers during the interview.

The research weakness lied on the criteria for assessing the aspect of students' contribution to cultural preservation. This research defines contribution as the students' active participation in cultural activities. However, since the students have a distinct interest, the criteria should be broadened to cope with those who are not art-minded yet have the desire to preserve cultures. Meanwhile, the pre-research interview

with the employers elucidated that they want to employ a teacher who actively involved in cultural preservation.

These research findings support the importance of character building of prospective science teachers through a conservation coaching as stated by [19-20] that science is closely related to characters. Moreover, they also firmly stated that without character education, university graduates are potentially got rejected by the community and the working world. Future science education must link between the scientific field and character building suitable with the conservation values developed in the Integrated Science Education of Universitas Negeri Semarang. A programmed coaching equipped with accountable academic handout was the essential part of this research. Additionally, the employed instruments to assess the students' characters is the grand design for future character building.

4. Conclusion

Referring to the assessment of students' characters which has been strengthened by the interview results, it concluded that the integration of conservation values was effective for character building. The habituation has also been reinforced by the suitable institutional policy which lets the cultivation runs well as a part of future teachers' education; for it is beneficial to meet the needs of the employers. Without a systematic character building, prospective science teachers are potentially got rejected by employers.

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