Developing an instrument model to assess teachers’ creativity in designing and teaching music subject

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Abstract

This paper aims at developing an instrument model to assess teacher’s creativity in designing and teaching music at school. The study was conducted by adapting the approach of Research and Development (R&D) from the model designed by Borg and Gall and the cycle model design developed by Cenamo & Kalk. The development comprises two stages; the model development and dissemination. The model development encompassed of model planning, model designing, as well as the try out. While, the dissemination stage was done by presenting the research result at a conference. At the end of the study, it was proven that the assessment instrument model used to assess teachers’ creativity in designing and teaching music subject at school had met with the research aim. It was shown from the try out test on the assessment instrument model development that: (1) the assessment material, assessment technique, rater criteria, assessment object, units of observation, competence test process, time allotment, observation process, measurement criteria, as well as the measurement rubric had been considered appropriate and had provenly matched from one to another so that it can be applied well; (2) the reliability of the assessment instrument based on Intraclass Correlation Coefficients/ICC test on consistency and absolute agreement definition type as well as the Generalizability Coefficient had met the criteria.

Keywords: instrument; assessment; creativity; learning; music


Introduction

Teacher’s competence development as guarantee of professional teachers demands on the cooperation between related institutions on teacher profession development. For an educational institution of educators, the need-based curriculum development is always made as to answer the demand and to adjust with the development of local and global society and innovative learning strategies, as a possible attempt to be done. For the related institutions on in-service teacher professional development, the development attempt can be made through the seminar, training, teacher certification, etc.

Teacher competence as a proficiency, ability, authority, mastery, skill, knowledge, etc. based on criteria, condition, and professional context is merely a requirement that has to be a possessed by all teachers, including music teachers. As one of sub-subject of bigger subject known as Cultural Art in Primary, Secondary, and High School, music teachers are expected...
and demanded to be able to master four required competences and a special competence that is suitable for the characteristics and goals of music learning at school (Inayah, et al., 2013, p. 6; Dharma, 2018, pp. 4-7; & Ismail, 2010, p. 57).

Research results on teacher performance in teaching music at school show that the field practice has not all met the expectation yet (Yosep, 2009; Astuti, 2010, and Sinaga & Utomo, 2010). The real implementation of music learning in general is still dichotomic, which means separating the theoretical and practical activities that were dominated by the implementation of lecturing and drill methods.

In the context of research on assessment and evaluation in cultural art subject, Raharja (2013) mentioned that discrepancies were still shown in the implementation of the component of planning, performance, assessment, and learning supervision as it was written in Ministry of National Education law number 41 the year 2007. In giving the assessment, especially in determining technique and instrument of the subject assessment of High School Cultural Art learning in Lombok Regency, the test showed that samples only indicated fair achievement. In fact, from 8 schools which were taken as samples in the study, there were still three out of eight schools which criteria were lower than fair.

The discovery was strengthened by the researcher himself when he conducted a need analysis on developmental research on teaching material development on courses in a music education study program in the context of action learning based learning context (2013). From this study, two major findings were found, related to: (1) kinds of competence needed by music’s pre-service teachers, and (2) kinds of challenges met by Secondary school teachers in teaching music at school. Regarding the challenges had by teachers, generally, it was related to the aspects of the curriculum, school policy, as well as facilities, media and learning sources availability. In the curriculum aspect, this study found that between the secondary school music teachers, there were still different opinions in terms of perception towards competence standard and basic competence as shown in cultural art curriculum for Secondary School students. It gave implication towards the differences of order and understanding of learning material which was supposed to be developed by teachers themselves.

Issues related to teacher competence had been reappeared as one of a debatable issue in the education world. In New Zealand, for example, Fitzsimons (1997, p. 7) stated that enforcing the competence standard of teachers was needed as an attempt to: (1) assist government in education management; (2) legitimate the education system; (3) define the goals of education; (4) assess the teacher; (5) improve the teaching management; (6) develop curriculum of teachers training; (7) improve the standard of students’ achievement and learning quality; (8) reform the teaching world; (9) enhance efficiency; and (10) promote teaching as a profession.

Completing the previous argument was Brenda et al. (1997, pp. 20-21) who mentioned that in Australia, competence as part of education professionalism stressed out its importance on four main components, which were: (1) competence identification, (2) standard specification, (3) development program, (4) assessment technology development. Two first components, in addition, were directly related to the attempts done by the government in determining the teachers’ competence standard both when they were in pre-service and in-service years as experienced teachers.

The teachers’ understanding towards learning material development and learning process as the main component of teachers’ competence is considered important. Learning activity as an educational activity should be able to combine activities both inside and outside the school in systematic and continuous ways. The manifestation can be in the form of various learning experience given to all students. To be able to realize it, therefore, teacher’s
creativity in designing (planning) and teaching the subject is considered important.

Creativity in the context of learning strategy and learning result as mentioned by Luik and Kukemelk (2009, p.1) was considered as an important part of the learning process by outstanding researchers, like, Hartley, Torrance Simpson, and Tellez. The researchers had taken notes that the teacher pedagogical understanding of the concept of creativity was considered relevant to the students’ learning achievement. Several problems faced by teachers and school in the attempt to develop creativity at school according to Marisi (2007, p. 170) were caused by: (1) the lack of teachers’ ability in measuring students’ creativity as the result of learning process; (2) the misunderstanding conception had by many researchers regarding to the concept of creativity and its development strategy in learning; (3) the schools' atmosphere and learning environment; and (4) the out of synchronization between demand on creativity development and the assessment system as well as the implemented washback.

In line with the previous statement was the research discovery found by Luik and Kukemelk (2009, p. 8) mentioning that even though the curriculum stated that teachers were obligated to assess their own creativity and their strategy in learning process, however, the reality shown that the understanding of teachers towards the concept of creativity and definition of learning strategy was still considerably limited. The concept of creativity and learning strategy as a concrete object for teachers cannot be understood comprehensively. The understanding of “learning strategy” concept was usually interpreted generally, which was limited only to the perception that teachers need to get students to learn or understand.

One of the learning goals at school is basically to help students to be more creative. Therefore, teachers’ creativity as the subject of learners has a significant role in the attempt to design or plan the learning activities and develop learning material. The implementation of various learning strategy and teachers’ creativity in developing learning material will inspire and motivate students in igniting creativity during the learning activity process. Therefore, creative teaching happened when a teacher combined the existing knowledge into several forms in order to obtain valuable results in facilitating students’ learning. This is supposed to be done before the teaching activity as well as during the teaching process when it was created as a response towards the demand of learning situation (Sale, 2009, pp.1-8).

Through his research, Sale (2005) also formulated several creativity aspects that were expected to be able to achieve the expected results, such as: (1) receiving attention when it is needed; (2) creating good relation; (3) growing positive belief; (4) improving psychology condition, and (5) making learning to be relevant and valuable. In order to obtain those results, a teacher might make the use of various resources that can be categorized into six general categories, there were: (1) gesture presentation (for instance, words, tone, gesture, observation, and listening) to present clarity meaning and student’s attention, as well as belief; (2) examples to illustrate facts, concepts, principles, and procedures; (3) activities that are provided to integrate, implement and consolidate learning; (4) story that is used to provide context and emotional understanding, (5) humor that is used to achieve relationship and provide novelty; as well as (6) audio-visual/ IT sources to involve all learning senses.

According to Mulyasa (2008, p.169), the creativity of students in the process of learning depended closely on the creativity of teachers in developing a standard of the material and conducive learning environment. Therefore, developing students’ creativity could be done by doing the following activities: (1) Not limiting the students’ space in learning and developing new knowledge, (2) helping students to think about incomplete object, exploring questions, and proposing original ideas;
(3) helping students in developing certain principles in to a new situation; (4) respecting individual differences and loosen rules and classroom norms; (5) not forcing teachers’ will to the students; (6) developing task that may stimulate the growth of creativity; (7) developing students’ self-confidence by helping them to develop their self-awareness positively without lecturing and dictating; and (7) involving students optimally in the learning process.

Competence on teacher creativity in education has been the demand for all teachers, including the teacher of cultural art subject which the sub subject is music. In music teaching and learning at school, the activity of doing art has to be able to give experience to students in developing conception, appreciation, and creation that may be done through activities to explore element, principle, process and performing technique in the context of various society culture. Therefore, music as one of media to develop creativity, imagination, and game emphasizes the freedom of thinking and how its disclosures.

Further, according to Sa’ud (2009, p. 54), for the need of analysis task, the role of teacher as the educator could be done through generic teaching competencies in performing actual teaching and learning process which was minimally marked by four abilities, comprising: (1) the ability to plan the learning process; (2) the ability to perform and manage the learning process; (3) the ability to assess the learning process; and (4) the ability to master all learning materials. Therefore, through this study, the discussion will be about the main aim of present research which is to develop a model of the instrument to assess teacher creativity in designing and teaching music subject at school.

Method

This study was conducted by implementing Research and Development research model that was adapted from the previous research design by Borg and Gall (1983) and the spiral model that was developed by Cennamo & Kalk (2005). The model adaptation in this study comprised two stages, there were: (1) the development stage which encompassed the activity of planning the assessment model and trying out the model, and stage (2) which was dissemination.

In order to collect the research data, the instrument used were the interview guideline, questionnaire, documents, the assessment and suggestion sheets, task, as well as observation and measurement guideline. The data analysis technique, in addition, was a combination of qualitative and quantitative methods (see Creswell, 1996, pp. 9-53 and Tashakkori & Teddlie, 2010, pp. 207-222). The qualitative technique was done to analyze data which was collected during the activity of analyzing context, focus group discussion, legibility test, validation test, expert review, and try out. While, the quantitative analysis technique was also done by the researcher on the stage of model design development and the try out or trial stage. Further, the quantitative analysis comprised of: (1) descriptive analysis (percentage); (2) the Interclass Correlation Coefficient (ICC) test on consistency definition, absolute agreement definition test; (3) generalizability coefficient test which was run by using SPSS version 16.0.

Results and Discussion

The Assessment Instrument Model of Teachers’ Creativity in Designing and Teaching Music Subject

The assessment instrument development on teachers’ creativity in designing and teaching music subject is actually one of an attempt to develop professionalism of pre-service and in-service teachers. The assessment instrument can be used to measure important competencies’ indicators that are needed by music teachers in public school since it refers to the basic value of competency that is applicable as a requirement of a more professional teacher practice based on the existing curriculum demand (McGaghie, 1994; Yullyanti, 2009;
The evaluation material to assess teachers’ creativity in designing the music subject that is developed, comprising teachers’ competence in planning and determining: (1) the learning result indicators; (2) the learning materials; (3) the modelled songs; (4) the learning activity strategies; (5) the learning media (audio media utilization, visual, audio visual and/or music instrument); and (6) the assessment techniques. Whereas, the evaluation material to assess teacher’s creativity in teaching music subject is in the form of teacher competence; which is seen in the teaching practice that is done in the form of music teaching simulation or known as microteaching.

The criteria of rater in the assessment instrument model implementation that is being developed is an educator who has the ability and experience in the field of music teaching and learning. Therefore, the ideal figure for rater is an educator (lecturer or informal educator) in the field of music education that minimally has a qualification in bachelor degree in music and has a formal certificate of teaching.

The technique implemented to assess the teacher creativity in designing and teaching music subject is a performance assessment. In the teacher competence in designing the music learning, the assessment object is in the form of the performance results of pre-service and in-service teachers that are developed based on the basic competence of music learning at school (product). The process of competency test is conducted in written form, while the form needed for the competence test process is about 100 minutes. The observation process towards results of competence test by rater is done after the competence test is held and completed.

The assessment object on teacher competence in implementing music learning is the performance of pre-service and in-service teachers in doing the music learning (process). The process of competence test is done in the form of microteaching with the time allotment of each test participant is about 40 minutes (± 5 minutes in the opening activity, ± 30 minutes will be the main activity, and the rest 5 minutes is the closing activity). The learning implementation is done in the music classroom that has been equipped with equipment and learning media based on the determined learning goals. The observation process on teachers’ performance by rater can be done directly during the competence test process or through the video tape.

Object and units of observation in assessing teachers’ creativity in designing and teaching music subject on each task item are explained in Table 1.

Criteria to measure three task items of assessment instrument model on teacher competence in designing the implementation of music learning is done using a rating scale technique type numerical rating scale. The task item is completed with a descriptor that shows that the learning design comprising learning result indicators, learning materials, demo songs, learning activity strategy, learning media, and assessment technique is supposed to be similar to the following criteria.

Criteria for a single task item on as-

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<thead>
<tr>
<th>Task Items</th>
<th>Objects of observation</th>
<th>Units of observation</th>
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<tbody>
<tr>
<td>1, 2, and 3</td>
<td>The development of learning result indicators, learning material, modelled song, learning activity strategy, learning media, and assessment technique.</td>
<td>Learning design within time allotment 2 learning hours (2X40 minutes).</td>
</tr>
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<td>4</td>
<td>Implementation of learning (simulation)</td>
<td>Opening activity (± 5 minutes), main activity (± 30 minutes), and closing activity (± 5 minutes).</td>
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Table 2. Criteria to measure three task items of assessment instrument model

<table>
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<tr>
<th>Criteria</th>
<th>Descriptor</th>
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<tbody>
<tr>
<td>1</td>
<td>All indicators of learning result have been appropriate with the basic competence given in the curriculum.</td>
</tr>
<tr>
<td>2</td>
<td>Learning material has been appropriate with basic competence and learning result indicators that had been formulated before.</td>
</tr>
<tr>
<td>3</td>
<td>The design of the demo has been appropriate with the learning materials.</td>
</tr>
<tr>
<td>4</td>
<td>Learning activity is done by emphasizing the musical activity (is not only in theoretical explanation).</td>
</tr>
<tr>
<td>5</td>
<td>Teacher inductively guides the student in understanding all concepts of music aspects (such as, melody, rhythm, harmony, expression, timbre, structure, and song lyric) from a cultural context through a variety of musical activity.</td>
</tr>
<tr>
<td>6</td>
<td>Musical activity in learning is started from the simple activity to the more complex one.</td>
</tr>
<tr>
<td>7</td>
<td>Involving student activity both in individual and group work.</td>
</tr>
<tr>
<td>8</td>
<td>Selecting and using media as relevant learning resources in supporting the learning results</td>
</tr>
<tr>
<td>9</td>
<td>Assessment technique that is used has been appropriate with all indicators of the determined learning results.</td>
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Table 3. Stage of opening activities

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<tr>
<th>Criteria</th>
<th>Descriptor</th>
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<tbody>
<tr>
<td>1</td>
<td>Teacher delivers basic competence, goals of learning or indicators of learning result that will be accomplished after the learning.</td>
</tr>
<tr>
<td>2</td>
<td>Teacher explains or gives a brief introduction based on the context about materials which is about to be taught.</td>
</tr>
<tr>
<td>3</td>
<td>Teacher gives an example that supports explanation or brief illustration related to the material that is taught.</td>
</tr>
<tr>
<td>4</td>
<td>Opening activity is done by involving the students (in the form of question and answer and/or demonstration.</td>
</tr>
</tbody>
</table>

The assessment model of teacher competence in teaching music subject is done by using a rating scale technique type numerical rating scale. The task item is given a descriptor that shows that the learning implementation that is done by teachers of music should be in line with the criteria that has been determined in the opening, main, and closing activities.

In the stage of opening activities, descriptors are given which shows that the implementation of learning should be appropriate with the following criteria.

In main activity, descriptors are given to show that the learning implementation has been appropriate with the following criteria.

Finally, in the part of the closing activity, descriptors are also needed to show that the learning implementation has been in line with the following criteria.

Reliability Test Result on the Assessment Instrument of Teachers’ Creativity in Planning and Performing Music Learning

Try out of the assessment instrument of teacher’s creativity in designing and teaching music subject is conducted in three stages, comprising: (1) the stage of pre-try out; (2) try out stage I; (3) try out stage II. In the stage of pre-try out, the activities are testing the eligibility of the assessment instrument that is being developed by involving linguists and pre-service teachers on music learning. Meanwhile, in the try out stage I and II, the activity is held by doing assessment instrument implementation test that is being developed by involving the testing subject, involving pre-
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The Analysis of Reliability Coefficient of Assessment Instrument of Teachers’ Creativity in Designing and Teaching Music Subject

Based on the analysis of the try out stage II as the follow up of the previous try out showed that the reliability coefficient of the assessment instrument that is developed in the study had met the determined criteria. The enhancement of reliability coefficient of the assessment instrument that is being developed is proven by the analysis result of Intraclass Correlation Coefficient (ICC) test on consistency definition and absolute agreement definition type of the second try out, as explained in the following table.

The criteria are referred to the claim made by Fleiss (in Jordan, 2012) that states that in performance assessment, the reliability assessment can be made up to the lowest value, which is 0.60. For example, in Kappa analysis, Fleiss categorizes the reliability coefficient scale into four categories, they are: (1) Kappa <0.4 belongs to bad; (2) Kappa 0.4-0.60 belongs to fair; (3) Kappa 0.60-0.75 belongs to good; and (4) Kappa >0.75 belongs to excellent.

The Generalizability Coefficient Analysis of Assessment Instrument on Teachers’ Creativity in Designing and Teaching the Music Subject

The generalizability coefficient is done to collect further information about rater consistency as the proof of eligibility of the assessment instrument model of teacher’s creativity competence in designing and teaching music subject. Through this test, information related to the comparison between variation will be gathered. The comparison we talk here is one which is caused by an attribute that is measured by measurement variation as a whole and the level of understanding between raters in doing rating to the measured attribute. Besides, it can be also used to obtain a complete understanding of the source of error in the measurement procedures

### Table 4. Main activity

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<tr>
<th>Criteria</th>
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<tr>
<td>1</td>
<td>Learning activity emphasizes on musical activity (not the conceptual explanation).</td>
</tr>
<tr>
<td>2</td>
<td>Musical activity in learning starts from the simple activity up to the more complex one.</td>
</tr>
<tr>
<td>3</td>
<td>The form of musical activity that is done has supported the indicator of the expected learning achievement</td>
</tr>
<tr>
<td>4</td>
<td>Teacher inductively guides the students in understanding the concept about various musical aspect through a variety of musical activity that is done.</td>
</tr>
<tr>
<td>5</td>
<td>The learning has involved students’ activity both individually or in the form of group.</td>
</tr>
<tr>
<td>6</td>
<td>The chosen media has been appropriate with the learning and has been used optimally in the learning activity.</td>
</tr>
</tbody>
</table>

### Table 5. Part of the closing activity

<table>
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<th>Criteria</th>
<th>Descriptor</th>
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<tbody>
<tr>
<td>1</td>
<td>Teacher performs evaluation in the learning process and the learning result.</td>
</tr>
<tr>
<td>2</td>
<td>Teacher reviews, summaries, and/or concludes the material that is taught.</td>
</tr>
<tr>
<td>3</td>
<td>Teacher follows-up in the form of assignment to the students for enrichment or learning sources for the next meeting learning material.</td>
</tr>
<tr>
<td>4</td>
<td>The activity of review, summary, and/or conclude the learning material with student participation is exist.</td>
</tr>
</tbody>
</table>

service and in-service teacher on music learning who are all belong to the alumni of Drama, Dance, and Music Department, Faculty of Languages and Arts, Universitas Negeri Semarang.
This analysis procedure is performed in detail by the following formula.

\[ r_{xx}^{2} = \frac{\sigma_{true}^{2}}{\sigma_{obs}^{2}} \]

\[ \sigma_{true}^{2} = \text{varian sebenarnya} \]
\[ \sigma_{obs}^{2} = \text{varian teramati} \]
\[ r_{xx}^{2} = \text{koefisien generalisabilitas} \]

\[ \frac{\sigma_{true}^{2}}{\sigma_{obs}^{2}} = \frac{\sigma_{p}^{2}}{n_{p}^{2}} + \frac{\sigma_{q}^{2}}{n_{q}^{2}} + \frac{\sigma_{pq}^{2}}{n_{p}^{2}n_{q}^{2}} + \frac{\sigma_{pr}^{2}}{n_{p}^{2}n_{r}^{2}} + \frac{\sigma_{qr}^{2}}{n_{p}^{2}n_{r}^{2}} + \frac{\sigma_{pq}^{2}}{n_{p}^{2}n_{q}^{2}} \]

\[ p = \text{item} \]
\[ q = \text{rater} \]

Based on the try out data, results of tests of between-subjects effects through univariate analysis of variance that is run by SPSS version 16.0 shows that the mean square of item, rater, subject, item *rater, item *subject, rater*subject, and item*rater*subject of the assessment instrument of teacher competence in designing and teaching the music subject is summarized in the following table.

The value of Mean Square (MS) item, subject, item *rater, item*subject, rater*subject, and item*rater subject of assessment instrument on Teacher Competence in Planning and Performing Music Learning

After the manual calculation to the Mean Square (MS) by using the formula, results indicated that there is as much as 0.1539 and as much as 0.2150. Based on both variants ( ), therefore, the generalizability coefficient ( ) of the assessment instrument model on teacher competence in designing and teaching music subject within four items, three raters and nine subject items is as much as 0.716. Therefore, the analysis result shows that the generalizability coefficient of teacher competence assessment instrument in designing and teaching music subject has met the criteria as determined in the analysis test of Intraclass Correlation Coefficient (ICC) type consistency.
Conclusion

At the end of this Research and Development study, a set of an assessment instrument to assess teachers’ creativity in designing and teaching music subject was successfully designed. It claims that this assessment instrument has considered the characteristic of the subject and curriculum used in teaching music at secondary school. The model of assessment instrument that is being developed in the form of assessment guidelines include explanation and details about: (1) assessment material, assessment technique, task, rater criteria, assessment object, units of observation, the competence test process, time allotment, the observation process, the measurement criteria, and its rubric.

The product resulted from this research has been tried out for 3 stages, the pre-try-out stage involving experts, the try-out stage I, and the try-out stage II that both involves the Secondary School’s pre-service and in-service teachers of music. The reliability coefficient analysis result also shows that the design of assessment instrument model has met with the condition and determined criteria. Meanwhile, from the creativity aspect in its implementation, this assessment model can be applied well. The implication of the research results have been specifically proven to be able to be used to train teachers and develop their professionalism in teaching music in secondary school or in other contexts of need that is related to the development issues of the assessment instrument.

References


Marisi, A.K. (2007). Efektivitas Model Pen-


