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Teacher Assistance in Subject Planning Based on Backward Design at SMK Muhammadiyah 1 Palu

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ABSTRACT

Effective instructional course design is key to improving the quality of learning in schools. However, many teachers, especially at SMK Muhammadiyah 1 Palu, still face obstacles in systematically designing and planning subject courses that are oriented towards student learning outcomes. The backward design model offers a more innovative and structured approach that focuses on the targeted final learning outcomes (instructional learning outcomes/ILOs) before determining teaching and learning activities (TLAs) and assessment tools (ATs). This community service activity (PkM) aims to assist school teachers in applying the backward design model in planning and designing subject lessons. This PkM activity was carried out in a planned manner in several stages: Presentation, Group Work/Practical Simulation, Training/Assistance, and Evaluation. The results of the PkM show that the average score for the learning tools/lesson plans in the form of teaching modules was 4.83, which is in the excellent category. This indicates the effectiveness and productivity of the mentoring for teachers at the school. They have been able to design backward design-based learning. In addition, the results of this teacher mentoring also showed a positive contribution through the post-test results, which facilitated teachers in understanding the backward design and constructive alignment models in systematic learning planning and design. This is an important part of improving teachers' professional competence and ultimately has a positive impact on the quality of learning for students at the partner school, SMK Muhammadiyah 1 Palu.

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INTRODUCTION

Education plays a strategic role in human resource development from primary to secondary education. This role is primarily carried out through systematic learning planning (instructional lesson planning) to encourage and implement effective learning processes and activities. Students, as the main element in the learning process, must be optimally facilitated to develop their full potential. They are encouraged to be actively involved during learning activities. Teachers play a crucial role in providing opportunities for maximum student participation and involvement. School teachers must be able to facilitate and offer innovative learning activities that enable students to interact with various learning resources available, either directly from teachers or from various sources prepared by the school. With the demand for a quality learning process, teachers are required to teach well. In other words, teachers must be able to offer and implement a meaningful and effective learning process for students (deep learning).

Furthermore, we generally understand that a meaningful and effective learning process cannot be separated from good learning planning. However, the reality in schools shows that many teachers still find it difficult to develop systematic lesson plans that are oriented towards student learning outcomes (Spady, 1994; Wiggins & McTighe, 2005; Ali, 2023). Unstructured planning often leads to inconsistencies between learning objectives, teaching methods, and assessments used. Several factors that potentially cause this problem are the paradigm or mindset of teachers towards strategies and models of subject planning and design that are not yet fully based on learning outcomes (Spady, 1994; Wiggins & McTighe, 2005; Sukmadinata & Syaodih, 2012; Richards, 2013). Many teachers in schools are still accustomed to conventional approaches that are more oriented towards delivering material than achieving student competence and abilities. In addition, the lack of training and guidance in innovative learning planning strategies is also a major obstacle in school management. Until now, school management has focused on fulfilling the administrative needs of teachers. This high workload often prevents teachers from having enough time to develop effective learning plans. As a result, many teachers carry out or develop plans without considering the learning outcomes of the subjects they teach. This is considered suboptimal in responding to and adapting to the learning needs and characteristics of students. The accumulation of these problems has the potential to result in poor-quality learning, which in turn leads to suboptimal learning outcomes.

Furthermore, from our initial observations, we found that many teachers at SMK Muhammadiyah 1 Palu still use conventional strategies and patterns in preparing and designing lessons for the subjects they teach. They are stuck in a mindset that focuses on knowledge transfer, emphasising mastery of the material. The material and assessment are often not in line with the learning outcomes. In addition, teachers encounter several difficulties in: 1) reducing and elaborating competency or ability standards from the school curriculum/syllabus into measurable and observable lesson learning outcomes, and 2) aligning material and assessment with the intended learning outcomes. The mindset of teachers who focus on delivering material to students, then selecting methods that can be used in teaching, and subsequently conducting assessments is an ineffective sequence in the process of planning and designing subject learning in schools.

In line with developments in science, particularly the outcome-based education (OBE) paradigm that emphasises outcomes, experts encourage the use of the backward design model to produce meaningful and effective learning in schools (Spady, 1994; Wiggins, & McTighe, 2005; Praherdhiono, 2022). This model can be the right solution in facing the challenges or problems described above. This model allows teachers to design learning by first determining the expected final results, then developing appropriate

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assessments, and finally designing learning activities that support the achievement of these objectives. Thus, learning becomes more structured and oriented towards the competencies or abilities that must be achieved and mastered by each student in school. Research results show that the paradigm and use of the backward design model can facilitate students to learn more optimally and produce significant learning outcomes (Jensen et al, 2017; Davis & Austin, 2020; Mulyani et al, 2020; Ali, 2023; Imaningtyas et al, 2023; Setiyawati et al., 2023). However, the implementation of the backward design model in schools is still relatively low (Mulyani et al., 2020; Imaningtyas et al., 2023). One of the reasons for this is the lack of training and technical guidance to assist teachers in applying this approach or model. In addition, many teachers are still unfamiliar with assessment and evaluation systems that are precisely targeted at achieving learning objectives. Assessments often focus only on final exams, with little or no monitoring of students' learning progress towards achieving the final competencies or abilities of the subjects taught at school.

Therefore, the PkM implementation team has taken the initiative and carried out a structured mentoring process for teachers at SMK Muhammadiyah 1 Palu. Through these mentoring and training activities, we hope that teachers will be able to design more systematic learning, namely based on clear learning objectives and supported by assessments and learning strategies/methods that are in line with learning objectives. Thus, the quality of learning at school can improve significantly and sustainably.

METHODS

This Community Service Program was conducted at SMK Muhammadiyah 1 Palu for 15 teachers. In implementing the community service (PkM) activities in the form of mentoring and training for teachers at SMK Muhammadiyah 1 Palu, and to enhance the effectiveness of the material absorption process, this activity has been designed and implemented through the following approaches or methods:

Presentation

The PkM implementers delivered the material through a presentation on the concept of backward design in instructional course planning. Participants were facilitated to consider this model and compare it with the models they commonly use. This was intended to provide space for reflection and evaluation of learning planning practices and to see the advantages of the backward design model, which is more effective for active learning by students.

Group Work

Participants worked in groups and practised (practical simulation) in developing learning plans by following the backward design procedures or flow under the direction and guidance of the PkM implementation team. Each team member provides assistance to guide the participant groups in compiling and developing learning tools with the following main sequence: Determination of Learning Objectives (lesson learning outcomes), Compilation of Assessment Instruments, and Development of Strategies/Methods, Materials, and Learning Media (students' learning experience). This stage helps participants to gain direct experience based on the backward design model.

Training and Mentoring

At this stage, the PkM implementation team assisted participants in compiling and developing backward design-based teaching modules for one lesson to be taught. In this mentoring process, each

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participant worked independently and made improvements/revisions to the teaching modules by considering the points provided by the PkM implementation team. Input from the implementation team was an important part of improving and developing parts that were not yet optimal. The PkM implementation team is able to assist teachers at this school because they have a level of expertise relevant to the field of PkM, being experts in learning planning and design methodology. In addition, at this stage, participants also apply and practise the backward design-based learning process in their respective classrooms. They also note and raise issues encountered in planning and using the backward design model in the classroom to find solutions or alternatives that suit the conditions and characteristics of their classrooms.

Evaluation

In this evaluation activity, the PkM team assessed the products that had been compiled, developed, and implemented/used by teachers in learning, namely backward design-based teaching modules, using teaching module assessment criteria/indicators. Next, participants reflected on the level of achievement in the PkM implementation process and the use of backward design in learning by filling out the prepared instruments. This stage is the final part of the PkM activity in the form of assistance for teachers at SMK Muhammadiyah 1 Palu. The PkM implementation team observed the level of success of teacher assistance in planning backward design-based subject learning at SMK Muhammadiyah 1, Palu. In addition, the PkM implementers will provide recommendations to the school management for teacher development programmes at the school.

Furthermore, to measure the level of achievement in planning and using the backward design model, the PkM implementation team evaluated the final abilities of teachers by assessing the planning contained in the teaching modules. The final scores were categorised on the following scale.

- A score of 1 (one) was given to participants with a very poor level of ability in compiling and developing backward design-based teaching modules.
- A score of 2 (two) is given to participants with a poor level of ability in compiling and developing backward design-based teaching modules.
- Score 3 (three) is given to participants with a moderate level of ability in designing and developing backward design-based teaching modules.
- Score 4 (four) is given to participants with a good level of ability in compiling and developing backward design-based teaching modules.
- Score 5 (five) is given to participants with a level of competence in compiling and developing backward design-based teaching modules with a very good score.

RESULTS AND DISCUSSION

The planning and design of learning in schools has long been an important concern in government policy. This can be seen in the issuance of Law Number 14 of 2005 concerning Teachers and Lecturers, which emphasises that teachers are obliged to plan learning well. The ability and skills of teachers in schools in planning learning are largely determined by the knowledge and experience they have gained, both formally and informally. In line with the demands and needs of schools, universities also have a responsibility to assist teachers in schools. Based on observations at schools in the Muhammadiyah University complex in Palu City, the community service (PkM) implementation team has carried out an activity to assist teachers in developing lesson plans for subjects at SMK Muhammadiyah 1 Palu.

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The implementation of this PkM began with an introduction and explanation of the concept of innovative learning planning through the backward design model. Through this stage, the teachers appeared enthusiastic in following the explanation of the backward design model as an important element in the implementation of outcome-based education (OBE), especially on themes or topics that can be taken or explored by students that are relevant to the topics covered in the subject curriculum at school. In this session, several teachers asked many questions and sought confirmation about the learning planning model using the backward design approach in English lessons. This helped participants to reflect on and reconsider the learning planning sequence that they had been using. In this regard, participants reflected on their practices by comparing conventional planning models and backward design models. This section offers a rationalisation for the use of the more innovative backward design model and encourages constructive alignment of all learning components, namely material, learning activities, and assessment, aimed at achieving learning objectives (lesson outcomes). Teachers' ability to align all learning components demonstrates their commitment to helping students learn optimally through their involvement in the learning process (Mulyani et al., 2020; Probosari et al., 2024).

FIGURE 1. Presentation Stage of PkM Implementation

Next, the PkM implementation continued by asking participants to look at the learning tools they often use in learning. Participants examined each part of the teaching module through group work and reflected on the planning process they had been using or adopting. Each group examined the alignment of each component in the teaching module by considering the teaching material with the learning objectives (instructional learning outcome/ILO), teaching-learning activities (TLAs) with ILOs, and assessment tools (ATs) with ILOs. The participant groups were asked to specifically examine several components: 1) the learning objectives set, whether they used operational verbs (measurable and observable), 2) the assessment tools designed (ATs), whether the cognitive level or level met the targeted abilities and behaviours and whether the forms were varied, 3) whether all aspects of the instructional materials (IMs) used are geared towards achieving the ILOs, 4) whether the planned learning activities, including the series of activities and sub-activities, are aligned with the ILOs. It is important to consider this to ensure that all learning components (ATs, IMs, and TLAs) refer to and lead to the achievement of learning objectives (ILOs). In this group activity, participants are directed to reflect on their practices in planning and designing learning for the subjects they have been teaching. In addition, this activity helps participants to share their experiences in learning planning to be used as internal evaluation material for each participant or teacher.

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FIGURE 2. Mentoring Stage

Based on the group work process, the next stage continues with a mentoring process in which participants are asked to develop backward design-based learning plans. Each participant chooses a topic/sub-topic to be taught and formulates learning objectives for one or two meetings. They are guided to determine operational verbs by integrating material elements into the formulation of their learning objectives (ILOs). From the ILO formulation, participants are directed to develop assessment tools/forms (ATs) to be used with reference to the existing ILOs. Next, the development process continues with the determination of learning activities (TLAs) while still referring to the achievement of ILOs. The three stages in this backward design model: ILO – ATs – TLs are the main components of the mentoring activities for participants as teachers at SMK Muhammadiyah 1 Palu. Wiggins and McTighe (2005) emphasise that effective learning must consistently follow the backward design process in planning learning activities.

These stages and processes pose challenges because they reflect the mindset and habits in developing lesson plans, where teachers are accustomed to preparing learning materials in advance and considering ATs at the final stage of lesson planning. This was indicated by the participants' confirmatory questions to obtain responses from the implementation team. This activity was one of the areas of focus for the implementation team because the participants, or school teachers, received comprehensive explanations and insightful solutions to the practices they had been using. This encouraged teachers to think reflectively.

FIGURE 3. Backward Design-Based Learning Process

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Furthermore, in the mentoring stage, the participants also carried out learning activities in the classroom using the learning plans and designs (teaching modules) that had been prepared by the participants or teachers following the backward design process. At this stage, teachers first formulate learning objectives (ILOs), develop assessment instruments in the form of assessment tools (ATs) as a plan to measure the achievement of ILOs, and create activity plans in the form of a series of learning activities (TLAs) aimed at achieving ILOs. This learning design was implemented by teachers to ensure the implementation of the backward design model. By continuously testing the implementation of learning with the backward design model, teachers will continue to observe and study the learning effects that arise, especially in terms of student activity and achievement levels. The results of the study show that backward design is an effective strategy for increasing student engagement (Mulyani et al., 2020). In addition, the implementation team also monitored teachers' teaching activities based on backward design in schools through communication between teachers and principals. This was done so that they could continue to assist school teachers in creating and compiling learning designs and implementing backward design-based learning.

FIGURE 4. Participants' Enthusiasm in the Mentoring Activity

Another aspect of this PkM activity was the level of participation or activity of participants in following each stage and process in the implementation of the mentoring. From the outset, all 15 participants, who were teachers at SMK Muhammadiyah 1 Palu, took a pre-test on the approach to planning and designing the learning process for subjects. From the pre-test results, most teachers were not fully familiar with and did not fully understand the approach to developing backward design-based learning process planning. In addition, teachers tended to use a conventional approach in preparing and planning the learning process, where the material in the school's syllabus/learning objectives (ATP) document became the starting point for designing learning. The approach taken by teachers at this school implicitly follows the forward design model, which is an understanding and practice of learning planning that prioritises the scope of learning materials/content, followed by learning activities or methods, and ending with assessment. This forward design approach is considered less effective or optimal in providing a deep understanding of the topics/themes studied by students (Wiggins & McTighe, 2005) because the orientation and main objectives of learning activities lie in mastery of the material, not in the abilities or competencies of the students.

Furthermore, the implementation of this mentoring has had a positive effect on teachers' knowledge and understanding of more innovative and rational approaches or models of learning planning and design, namely the backward design model, in which the process and flow of planning and design begins with the learning objectives (ILO), followed by the preparation of assessment tools and the establishment of a series of learning activities aimed at achieving ILOs that indicate the final abilities that

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learners can demonstrate at the end of learning. Through several stages followed by participants or teachers, this PkM activity has helped teachers understand effective approaches to planning and designing learning for subjects at school. From the results of the assessment of the learning plans/teaching modules prepared by teachers, the average score was 4.83, which is in the very good category. These results show that the implementation of PkM in the form of teacher assistance at school has proven to be effective and significant in helping teachers to plan and design the learning of subjects taught at SMK Muhammadiyah 1 Palu. In addition, this PkM activity has facilitated teachers in adopting and using innovative learning planning and design patterns with the backward design model. The results of the post-test at the end of the PkM activity provided positive indications of a shift in teachers' mindsets and work patterns in preparing for teaching at school. This certainly provides space and opportunities for teachers to continue to encourage quality learning or in-depth learning for all students at school.

CONCLUSION

The implementation of PkM activities in the form of mentoring for teachers at SMK Muhammadiyah 1 Palu has been carried out well. The teachers were actively involved during the mentoring activities. The positive trend among teachers in planning and designing subject learning can be seen from the final product of this PkM activity, namely innovative lesson plans or teaching modules, which are learning plans and designs based on backward design. Teachers were able to develop instructional learning outcomes (ILOs) with clear indicators, followed by the development of standard assessment tools (ATs), and concluded with the establishment of a series of effective teaching and learning activities (TLAs) that refer to the achievement of ILOs. The final results of the PkM implementation showed that the teaching modules were assessed with an average score of 4.83, which is in the excellent category. The responses from the participants or teachers were positive, as seen from their participation and contribution in planning and designing subject learning at school, especially at SMK Muhammadiyah 1 Palu.

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