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Social media as learning resources: teacher creativity in society 5.0

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ABSTRACT This study analyses the extent of teacher creativity in the utilisation of social media as a learning resource in the digital era. It employed descriptive qualitative and quantitative approaches. The respondents (n=14) are 8 Mathematics teachers at Madrasah Tsanawiyah Negeri 1 Malang and 6 Mathematics teachers at Madrasah Aliyah Negeri 1 Malang. Three domains of creativity were explored including teachers' acting and thinking flexibility; ability to express ideas; and ability to adapt to a new environment. The results show that teachers' acting and thinking flexibility scored 3.83; teachers' ability to express ideas scored 3.93; and teachers' ability to adapt to a new environment scored 3.89. The overall average score is 3.88, meaning that teachers' creativity in utilizing social media as a learning resource is high.

1. INTRODUCTION

Other than knowledge transfer, the main responsibility of teachers includes generating effective teaching and learning process (Virgana, 2021), which calls for their creativity (Tekkumru-Kisa & Stein, 2017). They also need to understand students' various characters along with their learning difficulties, so that they can facilitate students with learning problems (Scheiner, 2020).

Each student has a unique character Jie et al. (2021) as seen from their learning styles. Different students have different ways of learning in receiving, processing, absorbing, and processing information. It is a particular model that students are familiar with in proceeding with the given information (Rahimi et al., 2017). Among the well-known learning styles are visual, auditory, and kinesthetic styles (Rahimi et al., 2017).

Concurrently, teachers' ability in recognising learning styles will make it easier for them to determine effective learning methods (Cabual, 2021). Such an ability will assist teachers in crafting a supportive learning atmosphere that caters to students' learning (El-Sabagh, 2021). It is undeniable that effective learning will help students to absorb information optimally (El-Sabagh, 2021).

An understanding of students' learning styles is among teachers' pedagogical skills (Tsankov, 2017). In this case, teachers are expected to design creative learning strategies and translate them into classroom practices. They must be able to build a supportive learning atmosphere, craft products, or implement ideas as evidence of their teaching capability (Dekelaita-Mullet et al., 2016).

Accordingly, teachers need learning resources to utilise in addition to their lecturing in the form of authentic learning resources, role models, instruments, tools, and procedures. These learning resources are expected to provide input information and data, which are convenient to proceed by the students (Suhirman, 2018). Research shows that the most-used learning resources, which are illustrated reading books, are only suitable for low to medium-level learning (Lau et al., 2020). There is a need to utilise various learning resources that take into account students' needs amidst the limited availability of learning resources that can afford higher levels in Bloom's Taxonomy (Abdullah, 2012).

Advances in Information, Communication, and Technology (ICT) nowadays give way to the openly-accessed learning resources, which can be used as an innovative learning resources (Hendikawati et al., 2019). Moreover, the practice of the distance education system has initiated solutions to overcome difficulties in face-to-face learning, and probes inspirations to the conventional classrooms that are no longer bound by time, location, distance and cost (Yensy, 2020). Many ICT and Internet of Things (IoT) practices today can be used to cater to effective teaching and learning activities.

The post-pandemic era, in particular, has left meaningful experiences in carrying out various teaching and learning activities. Not only education, people seem to get used to the IoT in meetings, merchants, or even the fulfilment of household needs (Untari, 2020), which bears an assumption that teachers may also be familiar with the use of those means. In the era where all needs are digitally facilitated through the internet, activities that were originally carried out onsite may as well be adapted online.

In this case, social media is inextricable from the ICT and IoT where teachers may utilise them to implement modern teaching and learning process (Suciati, 2020). Teachers' creativity and initiative in managing learning during a pandemic have increased and they have learnt to de-

sign and manage interactive digital learning media (Suciati, 2020). Teacher productivity is no longer a quest since creativity leads to classroom activities that support students' learning (Hidayat, 2020).

This present research aims to illustrate teacher creativity in using social media as a learning in the era of society 5.0. Results of this present study are expected to add knowledge on how teachers' creativity in using technology-supported online learning activities, and document how teachers improved digital learning quality that improves learning outcomes.

2. LITERATUR REVIEW

2.1 Teacher Creativity

Teacher creativity works in concert with teaching effectiveness in influencing student learning outcomes (Arifani et al., 2019). One common relationship between these two variables is also students' achievement, in which a high level of teachers' creativity and teaching effectiveness is positively correlated with learning achievement (Kubitskey et al., 2003; Farell et al., 2019; Vescio, 2008; Vogt, 2019). Teacher creativity refers to the application of new ideas in the teaching and learning process. It is inextricable from the creativity test developed by Wallach & Kogan (1965) . Meanwhile, teaching effectiveness is generally viewed multidimensionally through teachers' professional, pedagogical, social and personal attributes (Arifani et al., 2019; Barry, 2010; Paolini, 2015).

Several instruments have been devised to measure teacher creativity and teaching effectiveness (Barry, 2010; Calaguas & Glenn, 2013; Kandemir et al., 2019; Kulsum, 2000(@; Paolini, 2015; Pishghadam et al., 2012; Wallach & Kogan, 1965; Yıldırım & Yıldırım, 2019). Most instruments developed by the scholars above similarly classify the common attributes of creativity and effectiveness comprise internal and external factors, namely, motivation, personality, teaching strategies, and environment.

In Mathematics, two seminal instruments of teacher creativity and effectiveness have been developed by renowned scholars (Calaguas & Glenn, 2013; Kandemir et al., 2019; Yıldırım & Yıldırım, 2019). Despite its well-design and meticulous development, there have been limited studies specific to Mathematics measuring teacher ability, creativity, and effectiveness. This present study aims to fill this literature gap by examining the extent of creativity and effectiveness applied by Mathematics teachers. We follow the indicators of teacher creativity prescribed by Ghifar et al. (2019), which include: 1) flexibility in acting and thinking; 2) the ability to express ideas, and 3) the ability to adapt to a new environment.

2.2 Social Media

Technology and media can work hand-in-hand to enhance students' learning and assist teachers with modern classroom challenges (Smaldino et al., 2012). Social media, for example, can be used as learning means as it can facilitate communication, serve as a platform to share daily activities, increase creativity and individual fame, and help with marketing or community activities (Farell et al., 2019; Dewina et al., 2016). More than 90% of 143 million Indonesian internet users are on social media (Hermawansyah & Pratama, 2021).

In learning, social media offers new ways of teaching and learning activities (Yusi & Lestari, 2019). Especially, platforms such as Facebook, Twitter, Youtube, Zoom, Google Classroom, Line, Whatsapp, and WeChat are broadly used as learning platforms (Prisgunanto, 2015). Among the positive impacts of social media is that students and teachers can learn anywhere from multiple learning sources, yet negatively, social media limit direct contacts – not to mention the electricity and network disturbances (Damanik et al., 2019; Kurniasari et al., 2019; Yensy, 2020).

2.3 Learning Resources

Learning resources are any means that facilitate learning for students and support teachers' practices (Winaldi et al., 2019), which come in the form of products or role models (Rosiyanti & Muthmainnah, 2018). One can be said as a learning resource if it helps people convey knowledge in the forms of messages, people, materials, equipment, procedures, areas, materials, or events to facilitate the learning process, which can provide input, data, and interpretation used conveniently by the students (Suhirman, 2018).

In other words, learning resources primarily aim to help students obtain abilities and skills, as well as grow their interest in carrying out independent learning (Winaldi et al., 2019). Learning resources in the form of illustrated reading books are only suitable for elementary to secondary-level learning (Lau et al., 2020). Concerning this, Indonesian education requires much improvement as other means than books are limited (Abdullah, 2012).

3. METHOD

3.1 Type of Research

This present study employed descriptive quantitative. The respondents (n=14) are Mathematics teachers at Madrasah Tsanawiyah Negeri 1 Malang and Madrasah Aliyah Negeri 1 Malang. Respondents were taken purposively as the selected schools are among the excellent schools as named by the Indonesian Ministry of Religion. Accordingly, a large number of primary school and junior high school graduates are interested to continue their studies there is the evidence of the schools' quality. The quality is also reflected in the alumni profile, who mostly continue their education at reputable universities.

The instruments used were an observation sheet comprising statements that can help to answer the research questions. The included indicators are teachers': 1) flexibility in acting and thinking; 2) ability to express ideas; and 3) ability to adapt to a new environment (Ghifar et al., 2019).

The obtained data were analysed through the calculation of the frequency, percentage, and average score of the statement items in the instrument. The analysed data are presented and discussed narratively.

4. RESULT & DISCUSSION

4.1 Result

The following results are obtained from the instrument related to aspects of teacher creativity. The analysis is presented in the form of frequencies, percentages, and averages, which are described narratively to illuminate teacher creativity in using social media as a learning resource.

The domains of flexibility in acting and thinking consist of five aspects as summarized in Table 1. Based on the data (n=14), the highest score was on the teacher ability to

TABLE 1. Teachers' Flexibility in Acting and Thinking

No	Statement	Score				Average
		1	2	3	4	
1	Teachers can access social media	0 (0%)	0 (0%)	0 (0%)	14 (100%)	4
2	Teachers can utilise social media	0 (0%)	0 (0%)	2 (14.3%)	12 (85.7%)	3.86
3	Teachers can create social media account for their classes	0 (0%)	0 (0%)	6 (42.9%)	8 (57.1%)	3.57
4	Teachers can employ social media as an online learning platform to interact with students	0 (0%)	0 (0%)	3 (21.4%)	11 (78.6%)	3.79
5	Teachers start the teaching and learning process with social media	0 (0%)	0 (0%)	1 (7.14%)	13 (99.9%)	3.93
	Total	0 (0%)	0 (0%)	2.4 (17.15%)	11.6 (82.85%)	3.83)

access social media, while the lowest score was concerning teacher ability to create social media accounts for their learning activities. However, the overall average score was 3.83, categorized as very high. Hence, it can be said that teachers' flexibility in acting and thinking belongs to the excellent category.

The table also shows that no respondents picked the two lowest scores (1 and 2) compared to the three higher scores. It can be seen that the score of 3 averaged 2.4 with a percentage of 17.15%, while the highest score (4) averaged 11.6 with a percentage of 82.85%.

Overall, the five aspects of flexibility in acting and thinking were excellent, meaning that teachers utilise social media following the needs of the 5.0 era. In this digital era, teachers showed capability in both thinking and acting out the modern learning implementation. The interview results corroborate this finding where many teachers undoubtedly stated that are capable of utilizing social media. The problems, often, arose from the unstable network and connection.

Similar to the first domain, the domain of teachers' ability to express ideas while utilising social media also consists of five statements. The results are summarized in Table 2 above.

From the score distribution, it can be seen that most respondents marked high creativity much more than low creativity. This means that most teachers see themselves as creative in utilising social media for Mathematics learning. The table also shows that score 3 averaged 1 (7.14%), while score 4 averaged 13 (92.86%), confirming that teachers' ability to express ideas lies at a very high creative level. This finding is supported by the average score of four in the three statements out of five, which are material preparation of material, giving assignments, and instructions for carrying out tasks. Although the PowerPoint presentation slides (3.79) and material mastery (3.86) scored lower, they are still categorised as high. Overall, a score of 3.93 is obtained and interpreted as very high, confirming teachers' excellent ability to express ideas.

Further, teachers should always be able to adapt to the progressing conditions. In this era of society 5.0, teachers should have the ability to adjust in implementing digital-based learning activities. Table 3 summarises the responses of five domains reflecting teacher ability in adapting to the digital era. The average score is 3.89, showing that teachers are very creative in adjusting their teaching styles to digital needs. Out of five statements, three statements scored 4, concerning student attendance, motivation provision, and evaluation. Despite less satisfactory results in the domain of evaluation, the interviewed teachers argue that online learning activities hampered optimal evaluation. This could be caused by many things, including students' process of working on questions that could not be always monitored.

The lowest score, which was 3.57, related to the teachers' role in assisting students with the use of social media. This is due to the unstable network. Viewed from Score 3 (1.6 with a percentage of 11.43%) and 4 (12.4 with a percentage of 88.57%), it is visible that teachers' adaptive abilities in carrying out digital learning activities are excellent.

TABLE 2. Teachers' Ability to Express Ideas

No	Statement	Score				Average
		1	2	3	4	
1	Teachers prepare learning materials	0 (0%)	0(0%)	0(0%)	14(100%)	4
2	Teachers can make PowerPoint presentation slides and use them during classroom lectures	0(0%)	0(0%)	3(21.4%)	11(78.6%)	3.79
3	Teachers master the knowledge	0(0%)	0(0%)	2(14.3%)	8(85.7%)	3.86
4	Teachers give instructions on doing tasks	0(0%)	0(0)	0(0%)	14(100%)	3.79
5	Teachers start the teaching and learning process with social media	0(0%)	0(0%)	1(7.14%)	13(92.86%)	3.93
	Total	0 (0%)	0 (0%)	2.4 (17.15%)	11.6 (82.85%)	3.83

TABLE 3. Teachers' Ability to Express Ideas

No	Statement	Score				Average
		1	2	3	4	
1	Checking students' attendance via social media	0 (0%)	0 (0%)	0 (0%)	14 (100%)	4
2	Giving feedback and evaluations via social media	0 (0%)	0 (0%)	2 (14.3%)	12 (85.7%)	3.79
3	Posing questions via social media	0 (0%)	0 (0%)	0 (0%)	14 (100%)	3.86
4	Teachers give instructions on doing tasks	0 (0%)	0 (0%)	0 (0%)	14 (100%)	4
5	Teachers start the teaching and learning process with social media	0 (0%)	0 (0%)	6 (42.9%)	8 (57.1%)	3.57
	Total	0 (0%)	0 (0%)	1.6 (11.43%)	12.4 (88.57%)	3.89

4.2 Discussion

Based on the observation and interview results, teachers are capable of carrying out learning using social media. Such a platform was used because: 1) almost 100% of students are social media users; 2) the official learning management system (LMS) from school is not yet ready, and 3) the easily accessible social media via smartphones (no need to use a PC/laptop). It is aligned with Sadikin & Hamidah (2020) who state that the selection of models, methods, and online learning media must be adapted to the learning objectives, analysis of student's needs, and student characteristics. However, the utilisation of the internet and technological facilities will be a burden for those who do not get used to it. The practices of online learning require a framework that is practical, efficient, and supportive for creating an interesting learning experience for students. In this case, social media fulfils those three dimensions.

The key to effective learning is teachers. Hence, successful implementation of online learning through social media can only be generated when teachers can craft ideas and learning materials. Effective learning is characterised by the increased interest and motivation of the students, shown by improved learning outcomes.

Interesting social media use will result in students' active learning. This finding is supported by the interview results about the learning atmosphere in social media where students paid more attention during online lectures and actively responded to questions. It was also found that students learnt faster through social media. Accordingly, the assessment outcomes were satisfactory as they met effective indicators, namely: 1) learning quality as reflected through students' mastery; 2) learning level conformity as reflected through students' readiness to receive new material; 3) incentives as reflected through teachers' efforts to motivate students, and 4) time as reflected through the time needed to complete the materials. Nuraeni (2016) states that learning is effective if it improves learning outcomes significantly.

Nevertheless, the implementation of online learning is not free from drawbacks. Setyorini (2020) states that each model, method, and learning media has advantages and disadvantages. Among the constraints is the limited control of character education values, which can only be observed directly from students' behaviour. In this case, online learning methods should be innovative by 1) encouraging collaboration between teachers and students to initiate learning enthusiasm during the pandemic; 2) providing students with meaningful and challenging learning experiences; 3) taking into account the duration of the lessons and assignments; and 4) preparing learning activities that combine learning objectives, student interests and current global issues.

5. CONCLUSION

In conclusion, teachers' creativity in the digital era possibly improves students' learning experiences. The interview results confirm this finding where teachers stated students' increased attention during online lectures via social media and positive responses toward questions. The satisfactory results of assessment also provide evidence. On the other hand, online learning limits teachers' control over students' positive characteristics because it cannot be observed directly. Hence, several steps can be taken into account to innovate positive online learning experiences, such as 1) encouraging collaboration between teachers and students to build enthusiasm; 2) providing students with meaningful and challenging tasks; 3) considering the learning duration as well as the assignments, and 4) combining learning objectives and student interests through current global issues. The results of the research can be used by the school as a consideration. Other researchers are advised to conduct further research with a similar theme in other areas.

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