



A Phenomenological Study of Students' Problem-Solving Skills : A View from Cultural Background

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Abstract: This research aims to analyze students' problem-solving skills from the perspective of their cultural background. This research used a qualitative approach with a phenomenological method. Data were collected through interviews and verification of cultural background from identity cards, and analyzed following Moustaka's method. The research findings revealed that students had three main ways of approaching problem-solving. Firstly, university students chose solutions influenced by the cultural practices they embrace. Secondly, university students selected solutions with assistance from close acquaintances while adhering to societal norms. Lastly, university students emphasized the importance of resolving issues thoroughly.

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Introduction

21st-century competencies are key to the success of university students in preparing themselves for competitiveness in the professional world. One of the skills that should be mastered is problem-solving skills. Problem-solving skills refer to a student's ability to identify problems, search for and select various alternative problem-solving solutions, and make decisions to solve all the issues at hand. (Bariyyah, 2021). assert that problem-solving skills are a part of a thinking process. Students are often described as intellectuals expected to manifest their intellectual qualities through problem-solving abilities. One of the soft skills that drives students' intellectual capabilities is problem-solving skills. Consequently, problem-solving skills constitute an indicator of intellectual behavior and high-level thinking skills that need to be mastered by students (Ichsan et al., 2019).

Problem-solving skills are rooted in the process of problem identification, searching for alternative solutions, and applying the best solution in relatively novel situations (Araiza-Alba et al., 2021); (Graesser et al., 2018); (Pinter & Cisar, 2018)). Students frequently encounter problems related to personal or academic matters. Individuals facing a problem will attempt to find a solution to resolve the issue at hand. In addressing and confronting these problems, different thinking processes or skills are required for each individual. Problem-solving skills are integral to actualizing a student's thinking process in resolving a problem to be solved. In addition to being a demand of 21st-century development, students' problem-solving skills are intricately tied to the cultural context of their society and family. Values, perspectives, parental support, social support, and the campus environment play a central role in shaping students' ability to develop problem-solving skills. Students, as individuals, are inherently influenced by their respective cultures, as individuals are, in essence, products of their cultures (Mappiare, 2015).



The concept of culture in life is used to control one's attitude and behavior in various aspects of culture itself (Syamaun, 2019). The quality of behavior is based on societal or environmental judgments. Culture helps individuals understand what should and should not be done. Naturally, this condition has long-term psychological implications for individuals. The presence of culture in society will undoubtedly affect various aspects of students' lives over time, as culture is complex, abstract, and extensive in human civilization.

Problem-solving skills are essential in students' daily lives and are also required in the workplace. The National Research Council (USA) has identified the 21st-century skills needed by society and the workforce (Bariyyah, 2021). These skills are categorized into three competency domains: interpersonal, intrapersonal, and cognitive (Araiza-Alba et al., 2021; Kutlu & Kula Kartal, 2018). The cognitive domain includes critical thinking, creativity, executive function, and problem-solving skills (Silber-Varod et al., 2019; Araiza-Alba et al., 2021; Funke et al., 2018). Problem-solving skills are crucial for students to master, especially in the rapidly changing digital society.

Several research findings demonstrate that the mastery of problem-solving skills influences critical thinking abilities (Wechsler et al., 2018; Changwong et al., 2018; Ulger, 2018) creative thinking abilities (Kashani-Vahid et al., 2017; Puccio, 2017), student motivation (Araiza-Alba et al., 2021; Georgiou & Kayza, 2018), emotional intelligence (Drigas & Papoutsis, 2018), and students' social skills (Stoeffler et al., 2020). This research aims to analyze students' problem-solving skills from the perspective of their cultural background. This research is important to be studied because it can help students determine the source of the problem and find effective solutions. They have different ways of solving their problems, which can be seen from the habits or culture they have had since birth. The novelty of the research is that it uses the phenomenological method and can identify differences in the cultural background of each subject in the interview results.

Research Method

This research used a qualitative approach with a phenomenological method. This qualitative phenomenological study focused on exploring university students' experiences related to problem-solving skills in the context of their cultural background. It elucidated the dynamics of intersubjective meaning-making that led to the participants' perspectives. Data were collected through interviews and verification of cultural background from identity cards and analyzed using Moustakas' method (Gandaputra, 2018). The data analysis proceeded through the following stages: (1) grouping sub-themes according to the formulated issues, (2) reducing and eliminating data through epoche and bracketing, (3) identifying emerging themes in the data, and (4) identifying the data. Participants were randomly recruited university students from the Solo Raya region, representing various cultural backgrounds, totaling six individuals.

In this phenomenological study, researchers assessed the validity of their findings, corresponding to the truth of the conclusions supported by an accurate interpretation of the data description (Habsy, 2017). Conclusion validity plays a crucial role in ensuring the accuracy of research conclusions. Inferential validity in phenomenological research extends to individual participants or groups, ascertained through participant or member checks. Participants review their phenomenological experiences, providing data through interviews and collecting official documents, such as identity cards.



Results and Discussion

Students' Problem-solving skills

This section elaborates on the research results obtained through interviews over approximately one month. The interviews involved six participants, DN, SF, MN, AL, HI, and TM, university students from the Solo Raya region with diverse cultural backgrounds. The interview results indicated that these students possessed problem-solving skills that were beneficial in their lives. The interviews were transcribed to facilitate the data analysis process. Data analysis in this study followed the approach suggested by Moustaka (Gandaputra, 2018), which consists of three stages: epoche (bracketing and horizontalization), imaginative variation, and synthesis of essential meanings. In the epoche stage, the researcher aimed to eliminate biases and maintain neutrality toward the bracketed interview results, aligning them with corresponding themes and interpreting these bracketed themes (horizontalization). In the imaginative variation stage, the interview results reached a saturation point (intentionality).

In this study, the focus on problem-solving skills aligned with the views of (Polya, 2014) and (Mourtos et al., 2004) where several aspects were examined. The information provided pertains to the interconnected nature of different aspects within the informant group, encompassing the ability to define the problems, the ability to explore information, the ability to plan solutions, the ability to use solutions, the ability to check solutions, and the ability to evaluate. This compilation of aspects denotes the various stages of research sources utilized in problem-solving, as presented in the table below.

Aspect	Result
Ability To Define The Problems	<p>The first aspect involved the ability to define problems. Based on the interview findings, all six participants expressed their ability to define the problems they were experiencing. DN, SF, and MN could define the problems they were facing by understanding the issues and subsequently prioritizing which problem to solve first based on urgency.</p> <p>Similarly, HI and TM stated that they unconsciously listed problem priorities to determine which issue to address first. In contrast, AL, despite having the ability to understand his own problems, still required reminders from others regarding the issues he faced because he tended to underestimate problems. AL would prioritize a problem based on the demands of responsibility and its impact on others since he valued the well-being of others.</p>
Ability To Explore Information	<p>The second aspect, according to Polya (1973) and Mourtos et al. (2004), is the ability to explore information. All six participants demonstrated the ability to explore information by seeking to understand the roots of the problems they faced. DN, SF, MN, HI, and TM were aware of the challenges they faced and actively sought to discover the initial causes or roots of their problems. However, AL rarely identified challenges when solving problems because he was accustomed to taking a break if he felt unable to cope with his issues.</p> <p>DN, SF, HI, and TM expressed a need for assistance from others, with DN even mentioning that he would sometimes seek help from shaman when facing</p>



	<p>problems. MN and AL also required assistance from others when their problems involved other people. However, MN and AL mentioned that they would resolve and keep personal problems to themselves. Unlike the other five participants, who saw problems as arising from personal or others' mistakes, HI viewed problems as life's best teacher and regarded the issues as a destiny not to be regretted.</p>
Ability To Plan Solutions	<p>The third aspect, according to Polya (1973) and Mourtos et al. (2004), is the ability to plan solutions. All six participants stated that they were capable of planning solutions, as evidenced by their ability to generate lists of alternative solutions and determine which solution to choose DN, SF, MN, and AL were accustomed to creating more than one plan or backup plan in case the primary solution could not resolve the problem. In contrast, HI and TM were inclined to consider the best solution for the problems they faced.</p>
Ability To Use Solutions	<p>The fourth aspect, according to Polya (1973) and Mourtos et al. (2004), is the ability to use solutions. All participants stated that they possessed the ability to use solutions. They consistently took actions to resolve problems they faced while adhering to societal norms. They also demonstrated the capacity to control their environments by managing issues beyond their control. HI and TM believed in divine intervention that assisted them in facing such situations. DN and SF would seek input from others when confronted with problems beyond their control. MN dealt with problems beyond their control by making maximum efforts and preferred to resolve them directly with the involved parties. AL, on the other hand, prepared himself if the problems he faced could not be resolved.</p>
Ability To Check Solutions	<p>The fifth aspect, according to Polya (1973) and Mourtos et al. (2004), is the ability to check solutions. All participants verified the feasibility of solutions before implementing them, albeit in different ways. DN, SF, AL, HI, and TM checked the feasibility of solutions by seeking the opinions of others, while MN assessed feasibility by preparing more than one solution to always have a backup plan. The acceptability of solutions could also be observed through the endorsement of the solutions by people in their surroundings, and according to the statements of all participants, solutions devised by them were often accepted by others. All participants evaluated the success of their solutions through various considerations, pondering the consequences and remaining confident in the chosen solutions.</p>
Ability To Evaluate	<p>The sixth aspect, according to Mourtos et al. (2004), is the ability to evaluate. All participants stated that they could evaluate the problem-solving process they were engaged in by determining new alternative solutions if they felt the previous solution was not sufficiently effective in resolving the issues they</p>



faced. All six participants also expressed a strong need for validation from others to boost their confidence in the potential success of the chosen solution. For AL, while seeking validation was applicable to issues involving others, for personal matters, the preferred to initially keep the problems to themselves and only sought help from their partner when difficulties arose.

Problem-solving skills of university students in the context of their cultural background

Culture is a set of attitudes, values, beliefs, and behaviors shared collectively by a group of people but varying for each individual, communicated from one generation to the next (Sagala, 2013). It is an abstract but influential element in individuals' lives, including their problem-solving skills. That is because culture contains a framework of knowledge, experiences, beliefs, values, attitudes, meanings, hierarchies, religion, time, roles, spatial relationships, conceptions of the universe, material objects, and possessions acquired by a large group of people from generation to generation through individual and collective efforts (Widodo, 2010).

Culture plays a role in resolving conflicts between individuals and society. It aligns with the statement by Sumarto (Sumarto, 2019) that culture is a way of life that people transfer from generation to generation through various learning processes to create a way of life that best suits their environment. Culture is a pattern of shared basic assumptions that groups learn as a solution to the problem of external adaptation and internal integration. Social and cultural values have a strong influence on the problem-solving management process (Syukur & Bagshaw, 2013) because cultural values are a set of beliefs and behaviors within a society (Hindaryatiningsih, 2016).

In this research, students' cultural background is one of the factors that can influence problem-solving skills, including their perspectives on issues, societal norms, adopted values, as well as ethical and moral viewpoints. These findings align with the results of interviews conducted with six participants from diverse cultural backgrounds. These participants, with the initials DN, SF, MN, AL, HI, and TM, are migrant students living in the Solo Raya region.

DN, hailing from Bangka Belitung, maintains certain cultural elements. He still believes in the importance of seeking advice from shaman and observe Islamic rituals. DN also upholds *gotong royong* norms and places significance on marrying someone from the same region. In DN's environment, formal education is not highly regarded. SF, originally from Klaten, adheres to several cultural practices. He celebrates the tradition of "sadranan" with tolerance and mutual respect among various religious communities. SF follows ethical norms and values the importance of employment as a marker of respect in their community.

MN, a student from the Batak culture, continues to embrace various cultural traditions. It includes participating in customary Batak ceremonies during significant events such as weddings and funerals. He strongly emphasizes courtesy and values family togetherness within his extended family. However, there is a distinction in conversational habits with their extended family, characterized by a higher tone. AL, originally from Bali, upholds Bali's cultural norms, including the concept of "karmaphala" and the reverence for "aget." AL perceives no significant divergence between his cultural perspectives and those of his current place of residence, as he finds all learned values from external environments to be positive.

HI, who comes from East Java, still adheres to the culture of his origin, Madiun, which is mainly related to politeness. He also perceives no significant difference between the



culture in his hometown and his current place, as he values anything positive. TM, hailing from Kalimantan, maintains beliefs prevalent in their local community, such as "pusa," which signifies that anything served should at least be touched if one wishes to avoid tasting it. TM perceives no significant disparity between his cultural views and those of his current place of residence, as he consistently shows respect and avoids deviating from local customs.

From a philosophical perspective, culture manifests as local wisdom, constituting indigenous knowledge systems that are empirical and pragmatic. It is empirical because the local population's creations stem from the facts of their daily lives. It is pragmatic as all concepts developed within this knowledge system aim at problem-solving (Anamofa, 2018). The research results reveal the problem-solving abilities of students when viewed through the lens of their cultural backgrounds. AL, HI, and TM base their solution choices on the cultural practices they follow. For instance, AL's solutions are influenced by the norms of his place of origin, characterized by high tolerance and adherence to "aget." AL frequently expresses gratitude for his challenges and upholds politeness and respect for others during problem-solving. These findings are supported by the research of Putra & Sudibia (2019), which indicates that gratitude can be a crucial element in the context of perceived social support based on one's behavior and self-perception. Gratitude is highly relevant for both understanding and enhancing well-being and life satisfaction.

HI, influenced by the rural customs of his hometown in Madiun, displays strong village solidarity characteristics (Sutarto & Sudikan, 2004) and a relatively robust sense of communal cooperation, leading him to engage in deliberation when resolving issues consistently. HI is accustomed to conducting discussions with those involved in the problem-solving process. TM's approach has religious connections due to their family's practices, which include regular observance of religious acts like tahajud prayers, istiqarah prayers, and supplications. These religious practices aid TM in seeking solutions to the challenges he faces. This perspective is supported by the view of Purnomosidi (2018), who asserts that one of the positive methods humans can use to handle and control problems is through prayer. Conversely, DN and SF select solutions with input from their closest acquaintances, adhering to societal norms. This aligns with the findings of (Gainau, 2009), who emphasize that openness is key within ongoing relationships and that reciprocity contributes to the establishment of better relationships. Openness fosters trust, care, commitment, understanding, self-acceptance, personal growth, and friendship. MN emphasizes the importance of completing solutions properly. This perspective corresponds to the research by (Astri, 2012) which views problem-solving as an ongoing, open-ended process that prioritizes peace.

The research findings reveal that students have three main ways of approaching problem-solving. Firstly, university students choose solutions influenced by the cultural practices they embrace. Secondly, university students select solutions with assistance from close acquaintances while adhering to societal norms. Lastly, university students emphasize the importance of resolving issues thoroughly.

Conclusion

Based on the results obtained regarding university students' problem-solving skills in the context of their cultural backgrounds, the following conclusions can be drawn:

In the first aspect, which concerns students' problem-solving skills from a cultural background perspective, all six participants demonstrate the usefulness of their problem-solving abilities in their lives. In the second aspect, related to information exploration, all six participants exhibit the capability to explore information by investigating the origins or roots



of the issues they encounter. The third aspect revolves around the ability to plan solutions. DN, SF, MN, and AL are accustomed to creating multiple plans as backups if the primary solution cannot resolve the issue. Conversely, HI and TM evaluate and opt for the best solutions for their problems. The fourth aspect addresses the capacity to utilize solutions. All six participants (DN, SF, MN, AL, HI, and TM) assert that they can consistently employ solutions when faced with challenges. The fifth aspect deals with solution verification. DN, SF, AL, HI, and TM verify the feasibility of solutions by seeking input from others, while MN checks the feasibility by preparing multiple solutions to have backup plans. The sixth and final aspect involves the ability to evaluate. All six participants stated that they could assess the problem-solving process they were engaged in and determine new alternative solutions if they found the previous ones inadequate.

In summary, when analyzing students' problem-solving skills in light of their cultural backgrounds, it is evident that each subject's approach to problem-solving is influenced by their cultural norms and practices:

AL's choice of solutions is guided by the tolerance and "aget" norms of their hometown, leading them to express gratitude for the challenges they face and to uphold politeness and respect for others during the problem-solving process. HI's approach to solutions is rooted in the rural customs of their Madiun hometown, characterized by solid village solidarity and active deliberation when resolving issues. TM's problem-solving approach is deeply linked to the religious practices ingrained in their family. The influence of tahajud prayers, istiqarah prayers, and supportive supplications is evident in their method of seeking solutions to their challenges. In contrast, DN and SF select solutions with input from their close associates, adhering to societal norms. MN emphasizes the importance of resolving problems considerably and thoroughly.

Recommendation

The study is recommended for students, therefore the importance of conducting additional research to enhance students problem-solving skills through training. Problem-solving skills are essential for students in their daily lives. Moreover, it is crucial to incorporate cultural values into the development of these skills, as culture is closely intertwined with the lives of students and individuals in their surroundings.

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