# Scrutinizing the Awareness of Hidden Curriculum: Connecting Lecturers to Themselves, Students, and Non-Engineering Study Programs

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#### ARTICLE INFO

Article history: Received April 16, 2023 Revised April 20, 2023 Accepted September 20, 2023 Available online December 25, 2023

#### Kata Kunci:

Pengetahuan dosen, Kurikulum tersembunyi, Lingkungan kelas

Keywords: Lecturers' awareness, Hidden curriculum, Classroom environments



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## ABSTRAK

Hidden curriculum memainkan peran penting dalam keseluruhan proses pengajaran, dan tidak diragukan lagi hidden curriculum memiliki nilai dan fungsi yang tak tergantikan dari kurikulum eksplisit. Oleh karena itu, pengajaran di perguruan tinggi harus memperhatikan pemanfaatan hidden curriculum. Atas dasar pemahaman terhadap karakteristik dan fungsi dari hidden curriculum, penelitian ini bertujuan untuk pemahaman tentang hidden curriculum, mewawancarai beberapa dosen untuk menggali lebih dalam tentang bagaimana mereka menerapkan hidden curriculum serta membuat catatan observasi interaksi yang terjadi di dalam kelas. Metode campuran digunakan dalam penelitian ini. Purposive sampling digunakan untuk memilih 100 dosen non-engineering di Politeknik Negeri Sriwijaya. Teknik pengumpulan data yang digunakan adalah survei, wawancara, dan observasi. Hasil penelitian menunjukkan bahwa mayoritas dosen memiliki pengetahuan tentang hidden curriculum menggunakannya untuk meningkatkan kualitas pembelajaran baik itu melalui bahasa tubuh, nada suara, perubahan fisik kelas, menetapkan dan mempertahankan aturan dan norma, serta merefleksikan pengajaran mereka. Ditemukan juga bahwa semua jurusan mewujudkan pernyataan misi dan etos mereka. Kontribusi lebih lanjut dari penelitian ini adalah untuk memberikan pemahaman yang lebih dalam tentang hidden curriculum yang diterapkan di perguruan tinggi, serta seperti apa pengalaman para dosen tentang hidden curriculum tersebut. Pemahaman yang lebih baik tentang hidden curriculum diperlukan untuk meningkatkan penggunaannya di pendidikan tinggi.

#### ABSTRACT

The hidden curriculum plays a crucial role in the entire teaching process, and there is no doubt about that. It possesses the irreplaceable value and function of explicit curriculum. Therefore, teaching at a college should pay attention to utilizing hidden curriculum. On the basis of fully understanding the characteristics and functions of the hidden curriculum, this study analyze the understanding of the hidden curriculum, interviewed selected lecturers to probe deeper regarding how they use the hidden curriculum and made observations notes on classroom environments and interactions. A mixedmethod approach is used in this study. Purposive sampling was used to select 100 non-engineering lecturers in State Polytechnic of Sriwijaya for the statistical society. To collect information, survey, interview, and observation were applied. The findings showed that the majority of lecturers had knowledge of the hidden curriculum and utilized it to improve their classroom through body language, tone of voice, physical classroom changes, setting and maintaining expectations and norms, and reflecting upon their teaching. It was also found that all departments brought their mission statements and ethos to life. A further contribution of the study is to provide a deeper understanding of the hidden curriculum enacted in private higher education, as well as what lecturers experience the hidden curriculum to be like. A better understanding of hidden curriculum is necessary to improve its use in higher education.

### **1. INTRODUCTION**

There have been tremendous effects on education worldwide caused by the Covid-19 pandemic. According to previous studies, it is not only revolutionized the planet of education frontally and quickly but also confirmed the transfer of face-to-face lecturing activities to online lectures supported by elearning platforms and other sorts of online learning, also as activities (Batista-Toledo & Gavilan, 2022; Cahyadi & Widyastuti, 2022; Coman et al., 2020; Stoian et al., 2022). During the COVID-19 Pandemic, the government had given the rule to close all educational institutions in which the processes of teaching and learning had to be continued through online learning and via video calls with their students so that teaching and learning could still be reached by students wherever they are (Ahmed & Sintayehu, 2022; Bohak Adam & Metljak, 2022; Djalante et al., 2020; Hosen et al., 2022; Selvaraj et al., 2021; Suyadi & Selvi, 2022). Such a model was currently the best alternative as keeping colleges open poses a safety risk for students (Mishra et al., 2020; Noori, 2021; Selvaraj et al., 2021b; Lemay et al., 2021; Chandrasiri & Weerakoon, 2022). According to some observations made by the researchers, changes were occurring not only in the learning aspects but also in the behaviors of the students during online learning. Discipline, manner, engagement, honesty, responsibility, technology adaptation, and transformational language, according to other study, just a few of the issues that come up when student behaviors change (Dalimunthe et al., 2022; Welsen et al., 2023). The character education during this pandemic has become a little neglected (Elsayed, 2021; Selvaraj et al., 2021a; Sondakh et al., 2022; Lubiński & Tama, 2021; Melgaard et al., 2022;). Moreover, the moral acts taken by students when completing their academic assignments are dishonorable, i.e., copy-pasting from the internet (Dendir & Maxwell, 2020; Bilen & Matros, 2021; Janke et al., 2021; Reedy et al., 2021; Shbail et al., 2022).

Those who commit such acts, according to previous study suffer from what is called moral illness (Bhattacharya et al., 2022). Another moral value crisis suffered by students in online learning is a lack of responsibility value the students complete their academic assignments by committing academic theft (Johnson, 2015; Tomczyk & Walker, 2021; Muassomah et al., 2022; Sin & Cahyani, 2022). It means that they have lost their responsibility value to complete their academic assignments with dignity (Tomczyk & Walker, 2021; Muassomah et al., 2022). Several lecturers did not express complaints about the inconvenience of dealing with student behaviors when delivering lectures in online classes, according to professional conversations between students and the researchers as well as between researchers and a group of lecturers in WA. Since the teaching and learning environment did not allow them to thoroughly review the student's work, many lecturers merely tolerated and excused the students for doing such things. Now, at the beginning of 2023, the Indonesian government has allowed all educational institutions to fully reopen and hold the teaching and learning process face-to-face as it used to be. Due to no more COVID-19 pandemic restrictions, online teaching was shifted to traditional classroom teaching. Students may come to colleges and attend classes physically. In a physical classroom, there is a lecturer at the front of the room and the students. Lecturers base their lessons on standardized curriculums and administer tests to gauge how well their students are learning. Unfortunately, researchers empirically see that students' behaviors do not change. Lecturers are also seemingly ignored because of overloaded-teaching hours and administrative matters.

If these things keep happening, our education will be seriously threatened. Since lecturers are viewed as change agents and have a moral impact on their students' moral development, they need to understand the ethical complexities of their work. This is because education is a tool for helping students develop their character (Sailer et al., 2021; Tong et al., 2022; Chai et al., 2022; Gramaxo et al., 2023; Mangion & Riebel, 2023). The main purpose of education is to make effective, confirming, and difficult environments within which students will learn skills, tendencies, and behaviors to direct their lives with success (López-Alvarado, 2017; Michael Adam, 2020). It means education extends on the far side feat information or increasing psychological feature capacities toward developing the entire students, together with feeling, motivation, volition, spirituality, and nature (González-Pérez & Ramírez-Montoya, 2022). Schools according to previous studies must equip their students with the knowledge and skills which are needed to participate effectively as a member of society and contribute towards the development of shared values and common identity (Nami et al., 2014; Brinia et al., 2023; Diwan et al., 2023; Giray et al., 2023; Rivadeneira & Inga, 2023). These issues invite researchers to conduct a study of lecturers' awareness of hidden curricula. To overcome such problems, all lecturers must be aware of the importance of hidden curriculum (HC). The importance of HC in the teaching-learning process presents its share in various educational experiences, which leaves a strong impact on the students' ethical, social, behavioral, intellectual, and spiritual values. Generally, these values are so important not only for individuals but also societies. The values will determine both personality and behaviors (Öztok, 2019; Abuzandah, 2021; Raissi Ahvan, 2021). HC shapes students to become social individuals as it makes them more adapted to real life in the classroom (Bennett, 2017; Sarikhani et al., 2020; Nahardani et al., 2021). In the HC, according to previous studies lecturer is an important person to succeed in developing a student's personality and character (Abbaspour et al., 2022; Lukman et al., 2021). In other words, a lecturer is responsible for developing and improving students' characters that can be used or realized in the surrounding environment in addition to presenting the material. The results of the studies also showed that social skills and hidden curriculum were significantly correlated (Brinia et al., 2023; Giray et al., 2023). Other studies showed that the development of students' social skills is influenced by their learning experiences and social interaction (Baber, 2021; Ghahtarani et al., 2020; Gherghel et al., 2023; Ni & Jia, 2023).

Based on some of the previous studies, a research gap was found which will then be filled in in this study. Several previous studies that had been conducted discussed the hidden curriculum as a set of implications for knowledge, values, behavioral norms, and attitudes that the learner implicitly and empirically acquires during educational processes (Hibbert & Wright, 2023; Nahardani et al., 2021; Sarikhani et al., 2020). Based on the results of previous research, it can be said that HC is a tool that should be utilized in the development of skills and competencies in students, and furthermore aids in the development of social and emotional learning (Fletcher & Tan, 2021; Kerkhoff & Cloud, 2020; Mróz et al., 2020; Peng et al., 2014). Therefore, through this research, the researcher wants to know more about the extent of lecturers' knowledge of HC, as well as their ability to manipulate HC in order to create a positive classroom and school environment. So the purpose of this study is to analyze lecturers' conceptions of the hidden curriculum and its value in their everyday teaching. This study also looks at the ways lecturers do to leverage the hidden curriculum to support their students. Besides, in what ways the living hidden curriculum align with the mission statement of a school was also brought out.

## 2. METHOD

This In this study, researchers used mixed methods. The mixed methods research combines qualitative and quantitative methodologies in a single study (Timans et al., 2019; Meixner & Hathcoat, 2019; Dawadi et al., 2021; Ngulube & Ngulube, 2022;). In other words, using mixed methods enables researchers to provide adequate depth and breadth of answers to research questions (Brecht, 2022; Dawadi et al., 2021; Fadil et al., 2023; Herr et al., 2022; Meixner & Hathcoat, 2019; Popa et al., 2020). To collect the required data, the researchers consulted both primary and secondary sources of data. The primary sources of data were the results of survey, interview, and observation. As secondary sources, various documents particularly research methodology books, journal articles, and various sources related to the topic that was being discussed.

The participants are non-engineering lecturers from four departments at the State Polytechnic of Sriwijaya in Palembang. There are 100 lecturers involved in this research. Their compositions are 32 from the accounting department (10 males, 22 females), 27 from the business administration (11 males, 16 females), 20 from the English department (10 males and 10 females), and 21 from the tourism and travel business department (8 males, and 13 females). In this research, the researchers define a lecturer as any person who works with students in the capacity of teaching and supporting learning, both academically and socially. Demographic characteristics of the respondents is show in Table 1.

Variable	Frequency	Percentage
Gender		
Male	39	39%
Female	61	61%
Teaching experiences		
< 5 years	44	30%
> 5 years to 15 years	30	44%
> 15 years	26	26%
Department		
Accounting department	32	32%
Business administration department	27	27%
English department	20	20%
Tourism and travel business department	21	21%

#### **Table 1.** Demographic Characteristics of the Respondents

In this research, researchers used a variety of data collection methods to receive relevant information for each question of research (Estévez-Pedraza et al., 2022; Ursachi et al., 2015). Data

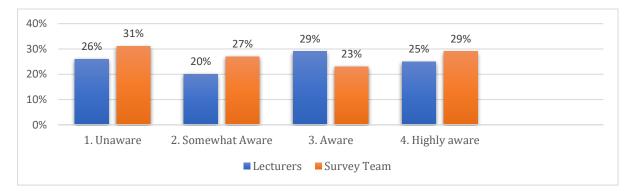
collection methods include the use of surveys, interviews, and observations. The researchers collected data on lecturers' conceptions of the hidden curriculum, researchers designed a survey that consisted of five demographic questions, 14 Likert scale questions, and one open-response question. A Likert scale response was used with a scale of one to four, to prompt a response that was not neutral. A neutral option likely would have prompted many participants to lean toward that choice. Cronbach's alpha was used to analyze the survey's reliability. The Cronbach's alpha for the survey was 0.973 categorized as high. Reliability coefficients range from 0.00 to 1.00, with higher coefficients indicating higher reliability (Mohamad et al., 2015; Ramu et al., 2023; Ridwan et al., 2020). The interview questions were piloted by selected lecturers at the four departments at the State Polytechnic of Sriwijaya, whose data was not included in the results. Following, purposeful interviews were conducted with selected lecturers who provided their contact information at the end of the survey, to closely examine the ways lecturers specifically incorporated and utilized the hidden curriculum in their teaching. Each interviewe sat with one or two researchers who conducted the interview. Each interview was recorded in an audio file and then transcribed by the researchers. Following the transcription of the interviews, the researchers created a codebook based on common themes in the interviews.

Observation sheets were created to analyze how departments live out their mission statements. First, researchers created a document organized by each department's stated mission, highlighting ways in which these values might be observed in the school. From this document, the researchers created observation sheets. Each observation sheet included individual sections of the mission statement, and within each of these sections, the researchers identified 3-4 observable behaviors. For each observable behavior, it ranked the level at which each behavior was observed within their respective schools and created notes to explain his or her observations in more depth. All data were analyzed by subgroups within the research team. Weekly meetings and ongoing discourse regarding our methods helped ensure a thorough and fair approach to considering the various forms of data.

## 3. RESULT AND DISCUSSION

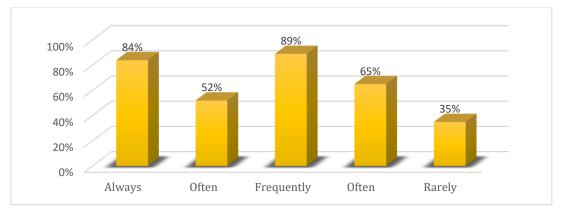
## Result

Survey results inform that researchers received 100 responses to the survey. Based on the collected data, there was a contrast between lecturers' perceived understanding and our rating of their understanding of the hidden curriculum as compared to the researchers' definition. The aware of the concept of the hidden curriculum is show in Figure 1.





According to Figure 1, researchers see that 26% of 100 lecturers put their knowledge of hidden curriculum at level one, unaware. Similarly, the survey team rated 31% of 100 lecturers at level one, following our definition. 20% of lecturers rated themselves at a two, initial understanding, whereas the survey team rated 27% of 100 survey respondents at a two, somewhat aware. Of 100 survey responses, 29% of lecturers rated their understanding of hidden curriculum at a three, aware. The survey team rated 23% of survey respondents at a three. Lastly, 25% of lecturers who responded to the researchers' survey rated themselves with a score of four, highly aware, however, from their written responses the survey team rated only 29% of survey respondents with a complete understanding of the concept of the hidden curriculum. In the survey, researchers asked lecturers how often they design lesson plans aligned with the values of their school and lesson plans aligned with their values. The result is show in Figure 2.





According to Figure 2, of the 100 survey responses, 84% of lecturers, stated they always design lesson plans to align with school values. 52% of lecturers said they often discuss the school's values in comparison to 89% of lecturers saying they frequently discuss the academic goals of the school. 65% of lecturers answered they often create lessons based on their values, while 35% of 100 said they rarely even never create lessons based on their values.

The survey reported participants' discussion or promotion of the following values in their classroom, and participants rated themselves as 'very often' communicating the following: kindness (62%), collaboration (60%), responsibility (70%), and respect (82%). Researchers also asked lecturers to rate how 'very often' they perform the following: consciously make expectations about students' behavior clear (81%), uphold classroom standards (75%), and create a classroom environment in which students are comfortable taking academic risks (66%). 73% of the 100 lecturers engaged students in critical thinking, motivated students who showed low interest, differentiated, and used a variety of assessment strategies, as valuable. 23% of lecturers responded that a majority of them were valuable to consciously think about during the school day. Based on results of less than 5 years of experience in Figure 3.

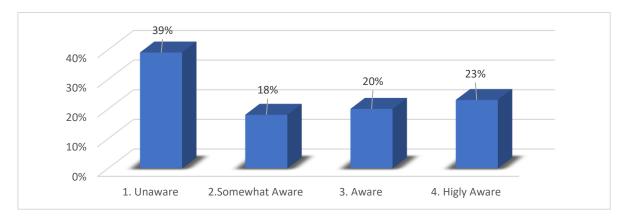
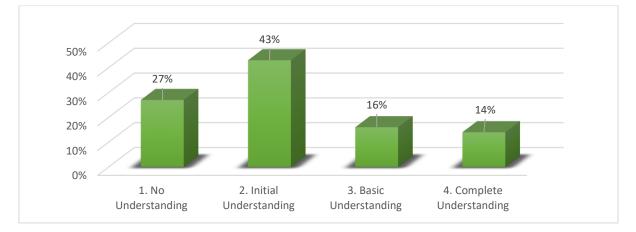


Figure 3. Lecturers' Self-Awareness of Less 5 Years Experience of the Hidden Curriculum (n=44)

Base on Figure 3, there were about 44 lecturers that had less than 5 years of experience in education. The last two questions of the survey looked at the extent of the lecturers' awareness of the hidden curriculum. When looking only at participants' self-perception with less than 5 years of experience, the majority, 39% of 44, ranked their knowledge of the hidden curriculum as one, unaware. Then, there were 18% , 20%, and 23% of 44 ranked their knowledge of the hidden curriculum as two, three and four indicating somewhat aware, aware, and highly aware. However, from their responses to the short answer question that followed, the survey team ranked the majority of lecturers with less than 5 years of experience, 43% of lecturers. However, from their responses to the short answer question that followed, the majority of lecturers with less than 5 years of experience at a 2, 43% of lecturers. A score of two indicates the majority of lecturers have an initial understanding of what hidden curriculum is show in Figure 4.



**Figure 4.** Rating from Research Team Towards Lecturers' Self-Awareness of Less 5 Years Experience of the Hidden Curriculum (n=44)

Base on Figure 4 show that 48% of 44 lecturers with less than 5 years of experience stated they often have non-academic goals beyond those stated in learning objectives. 85% felt that they sometimes or frequently designed lessons aligned with the communicated values of the study programs. Of the 44 lecturers with less than 5 years of experience, 95% felt that their values are closely or fully aligned with the school's stated values. However, only 20% of lecturers felt that they often create lesson plans based on their values. 41% of the 44 lecturers with less than five years' experience felt that they rarely discuss the values of their study programs with their teaching department. The majority of lecturers felt that academic goals for students were more frequently discussed as a department. Fifty percent of survey respondents with less than 5 years of experience responded that they have frequent discussions about study program-wide academic goals. When they were asked, "How often do you discuss or actively promote the following things in your classroom: Kindness, Collaboration, Responsibility, and Respect?" The majority of lecturers responded they promote these very often: 66% of 44 responses, 50% of 44 responses, 68% of 44 responses, and 80% of 44 responses, respectively. 84% of lecturers with less than 5 years of experience answered that they frequently made expectations of students' behavior clear. Additionally, 73% of survey lecturers found the practices of engaging students in critical thinking, motivating students who showed low interest, upholding classroom standards, differentiating, and creating a classroom environment where students were comfortable taking academic risks as valuable. Of the lecturers who had taken the survey, 30 of them have been in the profession for 5 to 15 years. When asked, "to what extent are you aware of the concept of the hidden curriculum?" 55% of lecturers had a three or four understanding, meaning they were aware or highly aware of it, respectively is show in Figure 5.

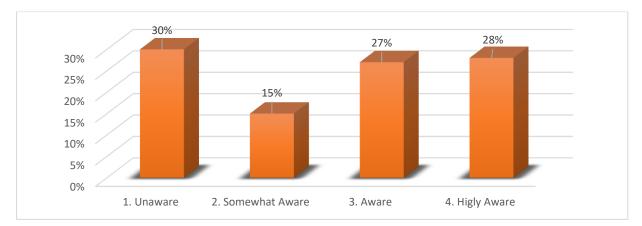
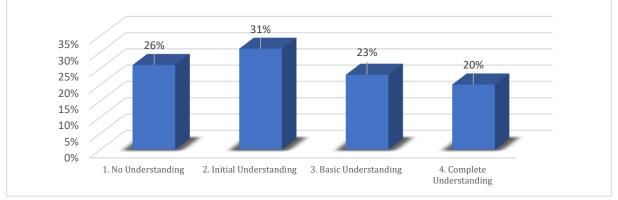


Figure 5. Lecturers' Self-Awareness of 5 to 15 Years Experience of the Hidden Curriculum (n=30)

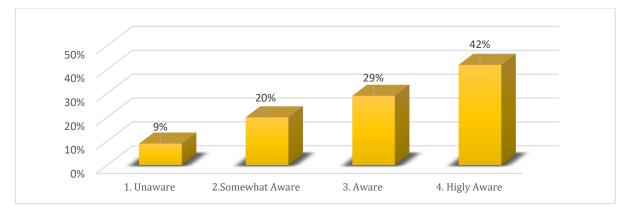
However, when researchers rated how lecturers understood the concept of hidden curriculum based on the open-ended response they gave in the survey, only 43% were at a three or four level, being a basic or complete understanding as show in Figure 6.



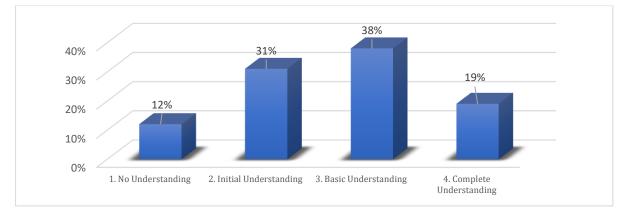
**Figure 6.** Research Team's Rating of Lecturers' Less 5 To 15 Years Experience of the Hidden Curriculum (n=30)

Base on Figure 6 in the survey for the 30 lecturers with 5-15 years of experience, 88% of them responded, at a three or four level, saying that their values often or very align with the school's stated values. 90%, also lecturers at a three or four, stating that the values their school sets for their students are often or very often important. However, 87% of lecturers said that they often or always align their lesson plans with the school's values, and only 55% of lecturers said that they often or always think about their values when creating their lessons. Further, 51% of lecturers ranked themselves at a 3 for how they often have non-academic goals for their students beyond those stated in their learning objective. 48% with 5-15 years of experience responded with a 2 when asked about how often they and their teaching department discuss the values of the school, meaning they do not regularly discuss this. However, when asked how often they discuss the academic goals set by the school, 58% responded with a four, meaning that they have frequent discussions about school-wide academic goals. When these 30 lecturers with 5 to 15 years of experience were asked how often they discuss or actively promote kindness, collaboration, responsibility, and respect, lecturers responded that they promote these very often: 58%, 63%, 75%, and 82%, respectively.

Out of 26 surveyed lecturers who reported having been in the education profession for 16 years or more, 41% of them gave themselves a four (a perceived complete understanding) concerning their conception of the hidden curriculum. Only 9% reported having no conception of the hidden curriculum at all, giving themselves a rating of one. When researchers rated each lecturer's response using the rubric, researchers only gave 19% a four on our Likert scale. Researchers gave 12% a one. Researchers scored the majority of the lecturers' responses a two or a three, with 31% anf 38% for each rating, meaning they had an initial and basic understanding respectively. In other words, researchers rated the majority of lecturers teaching for 16 years or more as having an initial (score of 2) or basic (score of 3) understanding of the hidden curriculum. Lecturers' self-awareness of greater than 15 years experience of the hidden curriculum is show in Figure 7.



**Figure 7.** Lecturers' Self-Awareness of Greater Than 15 Years Experience of the Hidden Curriculum (n=26)



**Figure 8.** Research Team's Rating of Lecturers' Greater than 15 Years Experience of the Hidden Curriculum (n=26)

Base on Figure 7 and Figure 8, participants responded that they 'very often' promoted the following in their classrooms: kindness (73%), collaboration (78%), responsibility (75%), and respect (83%). In the next section of the survey, which included questions about classroom practices, 91% of 26 lecturers reported that they "uphold classroom standards" very often. Comparatively, only 47% reported that they "engage students in critical thinking" 'very often' or 'quite a bit.' Across all of the classroom practices researchers inquired about, 76% said that all of them are valuable. Despite high reports of these classroom practices and activities, only 48% of experienced lecturers reported that they have non-academic goals embedded in their lesson plans very often. In terms of school values, 89% of 26 lecturers in this demographic responded "very important" when asked: "In your opinion, how important are the values that your school sets for students?" This means the majority of very experienced lecturers value what their school wants students to internalize. Despite this, only 34% reported that they plan lessons that are aligned with their school's values very often, which equates to a score of 4. 85% rated themselves at a 3, meaning that they actively consider the values of their school when lesson planning and value them overall.

The most significant difference between the level of understanding determined by the classroom lecturers themselves and the level determined by the research team lies within level two, being "somewhat aware" of or having an initial understanding of the concept of the hidden curriculum. Although only 17% of lecturers rated themselves as having an initial understanding, researchers determined 42% of classroom lecturers were at this level four, or "highly aware". Notable differences were found between the classroom lecturers' self-rated levels of understanding and the research team's rated levels. According to the research team, only 10% of the 100 participants were at a level of four with a complete understanding of the hidden curriculum, and only 17% were at a level of three with a basic understanding.

#### Discussion

Based on the ratings provided by the research team, it can be inferred from this information that classroom teachers only have a basic understanding of the hidden curriculum. In accordance with survey data, at least 67% or more of classroom lecturers responded that they actively promote these traits "very often" when asked how frequently they do so in their classrooms. Participants were asked to promote traits like kindness, collaboration, responsibility, and respect. Promoting values like these, in the opinion of the researchers, is an important component of the hidden curriculum. 65% of lecturers in classrooms consciously work to base their lesson plans on values almost all the time. This information suggests that classroom lecturers frequently let their values guide their instructional strategies. Despite their partial understanding of the hidden curriculum, classroom lecturers are aware of the value of incorporating and promoting values in the classroom. This finding accords with previous studies that lecturers convey hidden curriculum unconsciously or without intending it while he/she is teaching what is required by the official curriculum. Here, hidden curriculum refers to socially-approved knowledge that could indicate social-moral habits, attitudes, informal school rules, and beliefs, etc (Mei, 2015; Orón Semper & Blasco, 2018; Uleanya, 2022). This enables the researchers to draw the conclusion that lecturers do in fact understand the hidden curriculum, even if it is only an initial understanding.

The results of the interviews demonstrate that lecturers in all four departments are actively trying to improve the environment in the classroom through both implicit and explicit actions. All of the interviewees admit that the actions of the lecturers have an impact on the atmosphere in the classroom. Many interviewees stressed the value of fostering positive interactions with their students in a variety of

ways, such as by showing them respect, paying attention to what they have to say, saying hello when they arrive, and setting clear boundaries. However, all of the interviewees demonstrated deliberate actions to improve their relationships with their students, and they all shared the belief that improved relationships led to more positive learning environments. The interviewees identified both explicit and implicit ways in which they supported these positive interactions. The majority of interviewees also mentioned that one crucial explicit action that can enhance their classroom culture is "being clear about how I want [students] to behave." This finding also supports previous research that a lecturer is more central as s/he decides who is allowed to talk and what to talk about. The relations between a lecturer and the students and between the students themselves, as well as the rules and the ways of working in the classroom, have an effect on this interaction and also on its openness (Laine et al., 2020). Furthermore the other study argued in this interaction, learning is important for the development of students' cognitive, emotional, and motivational outcomes included with social skills, and positive self-efficacy (Burić & Moè, 2020). These lecturers can improve their student's behavior, the standard of the academic material, self-esteem, and manners by setting clear expectations.

In addition to forming good behavior in students, hidden curriculum cultivates discipline, responsibility, friendship, and other good characteristics. As soon as lecturers are aware of the impact that hidden curriculum has on their students, they always discuss their attitudes with their students in class. The hidden curriculum can also be used as a way for lecturers to develop the character of their students through this approach, such as cooperative learning, or as a means of communicating with them individually. Furthermore, this finding is in line with other research that found lecturer conduct is one of the key factors that determine the hidden curriculum. Lecturers play a crucial role in the manifestation of the hidden curriculum and should understand the important role they (and the transmission of the hidden curriculum) play in developing the character and learning of their students (Rossouw et al., 2023; Thielsch, 2017). Furthermore this research is in line with research conducted which states that there is a significant relationship between HC and the learning environment (Nahardani et al., 2021).

It is possible to say that lecturers are successful in building and guiding good behavior in their students with hidden curricula, with all the strategies and methods they teach so that it affects the students' good behavior. The lecturer is an integral part of the hidden curriculum and a key to its success in creating or shaping character and personality. It supports by previous study that a lecturer is in charge of providing hidden curriculum to students through inculcating attitudes (Dere, 2019; Sorrentino, 2019). It is therefore necessary to have a harmonious relationship between lecturers and students in order to achieve the goal of creating a good student behavior without obstacles. Lecturers are not simply responsible for delivering information, but also for delivering characters that can be used or realized in the real world. Lecturers facilitate classes by providing materials, opportunities, and guidance to students. Such a way makes students become more independent ones who are empowered to collaborate, make good use of available resources, and take charge of their growth and development. The implication of this research provides an overview related to lecturers' conceptions of the hidden curriculum and its value in their everyday teaching, the ways lecturers do to leverage the hidden curriculum to support their students, ways the living hidden curriculum align with the mission statement of a school. This study tries to determine the extent of lecturers' knowledge of the hidden curriculum, as well as their ability to manipulate it in order to create a positive classroom and school environment. This research will be very useful for lecturers and other researchers. However, this research still has shortcomings. The limitation of this research lies on limited research subjects that only involve non-engineering departments. Therefore, it is hoped that future research will be able to further deepen and broaden the research scope to include other variables as well as the research subject and how and to what extent lecturers are accurately exposed to the hidden curriculum.

#### 4. CONCLUSION

As a crucial component of the school's curriculum, the hidden curriculum has a significant and positive impact on students. However, it might be a problem, particularly for lecturers who do not make good use of this kind of curriculum. Using the hidden curriculum to change student attitudes and behaviors requires schools to acknowledge its value and drawbacks. By adopting the hidden curriculum as a fundamental component of their culture, schools may avoid problems that may arise if it is used without awareness. The students' good character is also significantly impacted by the use of a hidden curriculum. The lecturers' interview revealed several outcomes that take place in the formation of good student character, including good character, awareness of lecturer evaluations, and learning from incidents. The results of classroom observations show the hidden curriculum effect; the researchers note that students already have good character, adhere to the lecturer's instructions, and interact socially with their peers,

lecturers, and others. Based on the document analysis, the researchers conclude that the lecturer had made an effort to educate the students. Even though they are not explicitly stated, many curriculum values are hidden in the school's lesson plan, vision, and mission statements. Therefore, it can be said that the hidden curriculum may help students develop positive character traits.

## 5. REFERENCES

- Abbaspour, H., Moonaghi, H., Kareshki, H., & Esmaeili, H. (2022). Positive consequences of the hidden curriculum in undergraduate nursing education: An integrative review. *Iranian Journal of Nursing and Midwifery Research*, *27*(3), 169. https://doi.org/10.4103/ijnmr.ijnmr\_325\_21.
- Abuzandah, S. (2021). African Journal of Educational Management Teaching and Entrepreneurship Studies The hidden curriculum. *Academic Journal*, 2(2), 22–25. https://doi.org/10.5897/AJEMATES2021.0021.
- Ahmed, A., & Sintayehu, B. (2022). Implementation of Covid-19 protection protocols and its implication on learning & amp; teaching in public schools. *Heliyon*, 8(5), e09362. https://doi.org/10.1016/j.heliyon.2022.e09362.
- Baber, H. (2021). Social interaction and effectiveness of the online learning A moderating role of maintaining social distance during the pandemic COVID-19. Asian Education and Development Studies, ahead-of-p(ahead-of-print). https://doi.org/10.1108/AEDS-09-2020-0209.
- Batista-Toledo, S., & Gavilan, D. (2022). Implementation of Blended Learning during COVID-19. *Encyclopedia*, *2*(4), 1763–1772. https://doi.org/10.3390/encyclopedia2040121.
- Bennett, T. (2017). Creating a Culture: How School Leaders Can Optimise Behaviour. In *UK Department for Education*.
- Bhattacharya, S., Murthy, V., & Bhattacharya, S. (2022). The social and ethical issues of online learning during the pandemic and beyond. *Asian Journal of Business Ethics*, *11*(1), 275–293. https://doi.org/10.1007/s13520-022-00148-z.
- Bilen, E., & Matros, A. (2021). Online cheating amid COVID-19. *Journal of Economic Behavior & Organization*, 182, 196–211. https://doi.org/10.1016/j.jebo.2020.12.004.
- Bohak Adam, T., & Metljak, M. (2022). Experiences in distance education and practical use of ICT during the COVID-19 epidemic of Slovenian primary school music teachers with different professional experiences. *Social Sciences & Humanities Open*, 5(1), 100246. https://doi.org/10.1016/j.ssaho.2021.100246.
- Brecht, D. R. (2022). FGA Discussion on the Mixed Methods Research Approach to Studying the Relationship between School Leadership and Students Use of Technology. *International Journal of Innovative Science and Research Technology*, 7(3), 35–42. https://ijisrt.com/assets/upload/files/IJISRT22MAR142\_(2).pdf.
- Brinia, V., Katsionis, C., Gkouma, A., & Vrekousis, I. (2023). Attitudes and Perceptions of School Principals about the Contribution of Evaluation to the Efficient Operation of Schools Both at the Administrative and Educational Levels. *Education Sciences*, 13(4), 366. https://doi.org/10.3390/educsci13040366.
- Burić, I., & Moè, A. (2020). What makes teachers enthusiastic: The interplay of positive affect, self-efficacy and job satisfaction. *Teaching and Teacher Education*, 89, 1–10. https://doi.org/10.1016/j.tate.2019.103008.
- Cahyadi, A., & Widyastuti, S. (2022). COVID-19, emergency remote teaching evaluation: the case of Indonesia. *Education and Information Technologies*, 27(2), 2165–2179. https://doi.org/10.1007/s10639-021-10680-3.
- Chai, C. S., Chiu, T. K. F., Wang, X., Jiang, F., & Lin, X.-F. (2022). Modeling Chinese Secondary School Students' Behavioral Intentions to Learn Artificial Intelligence with the Theory of Planned Behavior and Self-Determination Theory. *Sustainability*, 15(1), 605. https://doi.org/10.3390/su15010605.
- Chandrasiri, N. R., & Weerakoon, B. S. (2022). Online learning during the COVID-19 pandemic: Perceptions of allied health sciences undergraduates. *Radiography*, 28(2), 545–549. https://doi.org/10.1016/j.radi.2021.11.008.
- Coman, C., Ţîru, L. G., Meseşan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability (Switzerland)*, 12(24), 1–22. https://doi.org/10.3390/su122410367.
- Dalimunthe, M. B., Dewi, R., Lubis, W., Setyosari, P., Dalimunthe, R. Z., & Lubis, M. A. (2022). Identification Of Student Character Quality On Online Learning In The Pandemic. *Jurnal Pendidikan Dan Kebudayaan*, 7(1), 54–64. https://doi.org/10.24832/jpnk.v7i1.2625.

- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. , . Journal of Practical Studies in Education, 2(2), 25–36. https://doi.org/10.46809/jpse.v2i2.20.
- Dendir, S., & Maxwell, R. S. (2020). Cheating in online courses: Evidence from online proctoring. *Computers in Human Behavior Reports, 2*(October), 100033. https://doi.org/10.1016/j.chbr.2020.100033.
- Dere, Z. (2019). Investigating the Creativity of Children in Early Childhood Education Institutions. *Universal Journal of Educational Research*, 7(3), 652–658. https://doi.org/10.13189/ujer.2019.070302.
- Diwan, C., Srinivasa, S., Suri, G., Agarwal, S., & Ram, P. (2023). AI-based learning content generation and learning pathway augmentation to increase learner engagement. *Computers and Education: Artificial Intelligence*, 4(December 2022), 100110. https://doi.org/10.1016/j.caeai.2022.100110.
- Djalante, R., Lassa, J., Setiamarga, D., Sudjatma, A., Indrawan, M., Haryanto, B., Mahfud, C., Sinapoy, M. S., Djalante, S., Rafliana, I., Gunawan, L. A., Surtiari, G. A. K., & Warsilah, H. (2020). Review and analysis of current responses to COVID-19 in Indonesia: Period of January to March 2020. *Progress in Disaster Science*, *6*, 100091. https://doi.org/10.1016/j.pdisas.2020.100091.
- Elsayed, W. (2021). Covid-19 pandemic and its impact on increasing the risks of children's addiction to electronic games from a social work perspective. *Heliyon*, 7(12), e08503. https://doi.org/10.1016/j.heliyon.2021.e08503.
- Estévez-Pedraza, Á. G., Hernandez-Laredo, E., Millan-Guadarrama, M. E., Martínez-Méndez, R., Carrillo-Vega, M. F., & Parra-Rodríguez, L. (2022). Reliability and Usability Analysis of an Embedded System Capable of Evaluating Balance in Elderly Populations Based on a Modified Wii Balance Board. *International Journal of Environmental Research and Public Health*, 19(17), 11026. https://doi.org/10.3390/ijerph191711026.
- Fadil, A., Davis, P., & Geraghty, J. (2023). A Mixed-Method Approach to Determine the Successful Factors Affecting the Criticality Level of Intermediate and Final Products on National Basis: A Case Study from Saudi Arabia. Sustainability, 15(7), 6023. https://doi.org/10.3390/su15076023.
- Fletcher, E. C., & Tan, T. X. (2021). Examining the 21st century skillset perceptions of academy and comprehensive school students. *Thinking Skills and Creativity*, 40(January), 100817. https://doi.org/10.1016/j.tsc.2021.100817.
- Ghahtarani, A., Sheikhmohammady, M., & Rostami, M. (2020). The impact of social capital and social interaction on customers' purchase intention, considering knowledge sharing in social commerce context. *Journal of Innovation & Knowledge*, 5(3), 191–199. https://doi.org/10.1016/j.jik.2019.08.004.
- Gherghel, C., Yasuda, S., & Kita, Y. (2023). Interaction during online classes fosters engagement with learning and self-directed study both in the first and second years of the COVID-19 pandemic. *Computers* & *Education*, *200*(December 2022), 104795. https://doi.org/10.1016/j.compedu.2023.104795.
- Giray, L., Kasandra, M., Asuncion, C., & Edem, J. (2023). Positive and Negative Lessons from Hidden Curriculum at a Philippine State University. 12(1), 73-96. https://doi.org/10.22521/edupij.2023.121.5.
- González-Pérez, L. I., & Ramírez-Montoya, M. S. (2022). Components of Education 4.0 in 21st Century Skills Frameworks: Systematic Review. *Sustainability*, 14(3), 1493. https://doi.org/10.3390/su14031493.
- Gramaxo, P., Seabra, F., Abelha, M., & Dutschke, G. (2023). What makes a school a Happy School? Parents' perspectives. *Education Sciences*, 1–21. https://doi.org/10.3390/educsci13040375.
- Herr, R. M., Deyerl, V. M., Hilger-Kolb, J., & Diehl, K. (2022). University Fairness Questionnaire (UFair): Development and Validation of a German Questionnaire to Assess University Justice—A Study Protocol of a Mixed Methods Study. *International Journal of Environmental Research and Public Health*, 19(23), 16340. https://doi.org/10.3390/ijerph192316340.
- Hibbert, P., & Wright, A. L. (2023). Challenging the hidden curriculum: Building a lived process for responsibility in responsible management education. *Management Learning*, 54(3), 418–431. https://doi.org/10.1177/13505076221132981.
- Hosen, M., Uddin, M. N., Hossain, S., Islam, M. A., & Ahmad, A. (2022). The impact of COVID-19 on tertiary educational institutions and students in Bangladesh. *Heliyon*, 8(1), e08806. https://doi.org/10.1016/j.heliyon.2022.e08806.
- Janke, S., Rudert, S. C., Petersen, Ä., Fritz, T. M., & Daumiller, M. (2021). Cheating in the wake of COVID-19: How dangerous is ad-hoc online testing for academic integrity? *Computers and Education Open*, 2(September), 100055. https://doi.org/10.1016/j.caeo.2021.100055.
- Johnson, K. (2015). Behavioral Education in the 21st Century. Journal of Organizational Behavior

Management, 35(1-2), 135-150. https://doi.org/10.1080/01608061.2015.1036152.

- Kerkhoff, S. N., & Cloud, M. E. (2020). Equipping teachers with globally competent practices: A mixed methods study on integrating global competence and teacher education. *International Journal of Educational Research*, 103, 101629. https://doi.org/https://doi.org/10.1016/j.ijer.2020.101629.
- Laine, A., Ahtee, M., & Näveri, L. (2020). Impact of Teacher's Actions on Emotional Atmosphere in Mathematics Lessons in Primary School. International Journal of Science and Mathematics Education, 18(1), 163–181. https://doi.org/10.1007/s10763-018-09948-x.
- Lemay, D. J., Bazelais, P., & Doleck, T. (2021). Transition to online learning during the COVID-19 pandemic. *Computers in Human Behavior Reports*, *4*, 100130. https://doi.org/10.1016/j.chbr.2021.100130
- López-Alvarado, J. (2017). The Nature of Knowledge and Ethical Issues. *International Journal of Research and Education*, 2(1), 1–5. https://eric.ed.gov/?id=ED573746.
- Lubiński, K., & Tama, D. K. (2021). The observed effects of distance learning on curriculum implementation in management and business studies. *Procedia Computer Science*, *192*, 2540–2549. https://doi.org/10.1016/j.procs.2021.09.023.
- Lukman, L., Marsigit, M., Istiyono, E., Kartowagiran, B., Retnawati, H., Kistoro, H. C. A., & Putranta, H. (2021). Effective teachers' personality in strengthening character education. *International Journal of Evaluation and Research in Education (IJERE)*, 10(2), 512. https://doi.org/10.11591/ijere.v10i2.21629.
- Mangion, M., & Riebel, J. A. (2023). Young Creators: Perceptions of Creativity by Primary School Students in Malta. *Journal of Intelligence*, *11*(3), 53. https://doi.org/10.3390/jintelligence11030053.
- Meixner, C., & Hathcoat, J. D. (2019). The nature of mixed methods research. In *Handbook of Research Methods in Health Social Sciences* (pp. 51–70). https://doi.org/10.1007/978-981-10-5251-4\_76.
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerstrøm, A. (2022). Academic Procrastination and Online Learning During the COVID-19 Pandemic. *Procedia Computer Science*, 196(2021), 117–124. https://doi.org/10.1016/j.procs.2021.11.080.
- Michael Adam, G. (2020). The Purpose Of Education. *International Journal of Advanced Research*, 8(1), 983–985. https://doi.org/10.21474/IJAR01/10391.
- Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1(1). https://doi.org/10.1016/j.ijedro.2020.100012.
- Mohamad, M. M., Sulaiman, N. L., Sern, L. C., & Salleh, K. M. (2015). Measuring the Validity and Reliability of Research Instruments. *Procedia - Social and Behavioral Sciences*, 204(November 2014), 164–171. https://doi.org/10.1016/j.sbspro.2015.08.129
- Mróz, A., Ocetkiewicz, I., & Tomaszewska, B. (2020). What should be included in education programmes The socio-education analysis for sustainable management of natural resources. *Journal of Cleaner Production*, 250(xxxx), 119556. https://doi.org/10.1016/j.jclepro.2019.119556.
- Muassomah, M., Abdullah, I., Hasanah, U., Dalmeri, D., Sihombing, A. A., & Rodrigo, L. (2022). The Academic Demoralization of Students in Online Learning During the COVID-19 Pandemic. *Frontiers in Education*, 7(May), 1–11. https://doi.org/10.3389/feduc.2022.888393.
- Nahardani, S. Z., Rastgou Salami, M., Mirmoghtadaie, Z., & Keshavarzi, M. H. (2021). The Hidden Curriculum in Online Education Based on Systematized Review. *Shiraz E-Medical Journal*, 23(4), 1–8. https://doi.org/10.5812/semj.105445.
- Nami, Y., Marsooli, H., & Ashouri, M. (2014). Hidden Curriculum Effects on University Students' Achievement. Procedia - Social and Behavioral Sciences, 114, 798–801. https://doi.org/10.1016/j.sbspro.2013.12.788.
- Ngulube, P., & Ngulube, B. (2022). Are we there yet? Mixed methods research in the South African Journal of Economic and Management Sciences. *Acta Commercii*, 22(1), 1–11. https://doi.org/10.4102/ac.v22i1.1013.
- Ni, Y., & Jia, F. (2023). Promoting Positive Social Interactions: Recommendation for a Post-Pandemic School-Based Intervention for Social Anxiety. *Children*, 10(3), 491. https://doi.org/10.3390/children10030491.
- Noori, A. Q. (2021). The impact of COVID-19 pandemic on students' learning in higher education in Afghanistan. *Heliyon*, 7(10), e08113. https://doi.org/https://doi.org/10.1016/j.heliyon.2021.e08113.
- Orón Semper, J. V., & Blasco, M. (2018). Revealing the Hidden Curriculum in Higher Education. *Studies in Philosophy and Education*, *37*(5), 481–498. https://doi.org/10.1007/s11217-018-9608-5.
- Öztok, M. (2019). The Hidden Curriculum of Online Learning. In *The Hidden Curriculum of Online Learning*. Routledge. https://doi.org/10.4324/9780429284052.
- Peng Mei. (2015). The Hidden Curriculum in Language Classrooms. Sino-US English Teaching, 12(6), 424-

429. https://doi.org/10.17265/1539-8072/2015.06.003.

- Peng, W. J., McNess, E., Thomas, S., Wu, X. R., Zhang, C., Li, J. Z., & Tian, H. S. (2014). Emerging perceptions of teacher quality and teacher development in China. *International Journal of Educational Development*, 34(1), 77–89. https://doi.org/10.1016/j.ijedudev.2013.04.005.
- Popa, D., Repanovici, A., Lupu, D., Norel, M., & Coman, C. (2020). Using Mixed Methods to Understand Teaching and Learning in COVID 19 Times. Sustainability, 12(20), 8726. https://doi.org/10.3390/su12208726.
- Raissi Ahvan, Y. (2021). Effectiveness of the Hidden Curriculum on Affective Attitudes of High School Students Toward Learning. *Journal of Research & Health*, 11(6), 423–434. https://doi.org/10.32598/jrh.11.6.1925.1.
- Ramu, P., Osman, M., Abdul Mutalib, N. A., Aljaberi, M. A., Lee, K.-H., Lin, C.-Y., & Hamat, R. A. (2023). Validity and Reliability of a Questionnaire on the Knowledge, Attitudes, Perceptions and Practices toward Food Poisoning among Malaysian Secondary School Students: A Pilot Study. *Healthcare*, 11(6), 853. https://doi.org/10.3390/healthcare11060853.
- Reedy, A., Pfitzner, D., Rook, L., & Ellis, L. (2021). Responding to the COVID-19 emergency: student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *International Journal for Educational Integrity*, 17(1), 9. https://doi.org/10.1007/s40979-021-00075-9.
- Ridwan, I. I., Salim, K. R., Adam, Z., Mohd, I. I., & El Fadil, N. (2020). Development and Validation of Scale using Rasch Analysis to Measure Students' Entrepreneurship Readiness to Learn Embedded System Design Course. *Procedia Computer Science*, 172(2019), 545–550. https://doi.org/10.1016/j.procs.2020.05.067.
- Rivadeneira, J., & Inga, E. (2023). Interactive Peer Instruction Method Applied to Classroom Environments Considering a Learning Engineering Approach to Innovate the Teaching–Learning Process. *Education Sciences*, *13*(3), 301. https://doi.org/10.3390/educsci13030301.
- Rossouw, N., Frick, L., Rossouw, N., & Frick, L. (2023). A conceptual framework for uncovering the hidden curriculum in private higher education A conceptual framework for uncovering the hidden curriculum in private higher education. *Cogent Education*, 10(1). https://doi.org/10.1080/2331186X.2023.2191409.
- Sailer, M., Schultz-Pernice, F., & Fischer, F. (2021). Contextual facilitators for learning activities involving technology in higher education: The C b -model. *Computers in Human Behavior*, 121(March), 106794. https://doi.org/10.1016/j.chb.2021.106794.
- Sarikhani, Y., Shojaei, P., Rafiee, M., & Delavari, S. (2020). Analyzing the interaction of main components of hidden curriculum in medical education using interpretive structural modeling method. *BMC Medical Education*, 20(1), 176. https://doi.org/10.1186/s12909-020-02094-5.
- Selvaraj, A., Radhin, V., KA, N., Benson, N., & Mathew, A. J. (2021). Effect of pandemic based online education on teaching and learning system. *International Journal of Educational Development*, 85(May), 102444. https://doi.org/10.1016/j.ijedudev.2021.102444.
- Shbail, M. O. Al, Alshurafat, H., Ananzeh, H., & Al-Msiedeen, J. M. (2022). Dataset of Factors affecting online cheating by accounting students: The relevance of social factors and the fraud triangle model factors. *Data in Brief*, 40, 107732. https://doi.org/10.1016/j.dib.2021.107732.
- Sin, T. H., & Cahyani, F. I. (2022). Character education to improving student learning outcomes. *Jurnal Konseling Dan Pendidikan*, *10*(1), 12. https://doi.org/10.29210/169800.
- Sondakh, J. J. S., Warastuti, W., Susatia, B., Wildan, M., Sunindya, B. R., Budiyanto, M. A. K., & Fauzi, A. (2022). Indonesia medical students' knowledge, attitudes, and practices toward COVID-19. *Heliyon*, 8(1), e08686. https://doi.org/10.1016/j.heliyon.2021.e08686.
- Sorrentino, C. (2019). Creativity Assessment in School: Reflection from a Middle School Italian Study on Giftedness. Universal Journal of Educational Research, 7(2), 556–562. https://doi.org/10.13189/ujer.2019.070228.
- Stoian, C. E., Fărcaşiu, M. A., Dragomir, G.-M., & Gherheş, V. (2022). Transition from Online to Face-to-Face Education after COVID-19: The Benefits of Online Education from Students' Perspective. Sustainability, 14(19), 12812. https://doi.org/10.3390/su141912812.
- Suyadi, & Selvi, I. D. (2022). Online learning and child abuse: the COVID-19 pandemic impact on work and school from home in Indonesia. *Heliyon*, *8*(1), e08790. https://doi.org/10.1016/j.heliyon.2022.e08790.
- Thielsch. (2017). Approaching the Invisible. *Zeitschrift Für Hochschulentwicklung*, *12*(4), 167–187. https://doi.org/10.3217/zfhe-12-04/11.
- Timans, R., Wouters, P., & Heilbron, J. (2019). Mixed methods research: what it is and what it could be. *Theory and Society*, 48(2), 193–216. https://doi.org/10.1007/s11186-019-09345-5.

- Tomczyk, Ł., & Walker, C. (2021). The emergency (crisis) e-learning as a challenge for teachers in Poland. In *Education and Information Technologies* (Vol. 26, Issue 6). Springer US. https://doi.org/10.1007/s10639-021-10539-7.
- Tong, D. H., Uyen, B. P., & Ngan, L. K. (2022). The effectiveness of blended learning on students' academic achievement, self-study skills and learning attitudes: A quasi-experiment study in teaching the conventions for coordinates in the plane. *Heliyon*, 8(12), e12657. https://doi.org/10.1016/j.heliyon.2022.e12657.
- Uleanya, C. (2022). Hidden curriculum versus transition from onsite to online: A review following COVID-19 pandemic outbreak. *Cogent Education*, 9(1). https://doi.org/10.1080/2331186X.2022.2090102.
- Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How Reliable are Measurement Scales? External Factors with Indirect Influence on Reliability Estimators. *Procedia Economics and Finance*, *20*(15), 679–686. https://doi.org/10.1016/S2212-5671(15)00123-9.
- Welsen, S., Wanatowski, D., & Zhao, D. (2023). Behavior of Science and Engineering Students to Digital Reading: Educational Disruption and Beyond. *Education Sciences*, 13(5), 484. https://doi.org/10.3390/educsci13050484.