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INVESTIGATING THE INFLUENCE OF STUDENT IDENTITIES ON SENSE OF COMMUNITY IN ONLINE LEARNING COMMUNITIES

Nur Azlinda Kasma Azizan Kamal Abdul Nasir^{1*}

¹ School of Education, Universiti Utara Malaysia, Malaysia
Email: nur.azlinda@uum.edu.my

* Corresponding Author

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Abstract:

This study explores the relationship between students' identities and their sense of community in the context of online learning among undergraduate students at Malaysian public universities. It investigates whether students' professional and learner identities influence their level of connectedness within online learning environments. Adopting a correlational research design and Structural Equation Modeling (SEM) analysis with a sample of 367 students, data were collected using the Students' Identities Questionnaire and the Classroom and School Community Inventory (CSCI). The findings indicate that while students demonstrate strong professional and learner identities, these identities do not significantly influence their sense of community. The study suggests that efforts to foster a sense of community in online learning should emphasize social interaction and inclusive engagement strategies rather than focusing solely on individual identity traits. The implications highlight the importance of lecturer facilitation and institutional support in building meaningful connections among students in virtual learning spaces.

Keywords:

Student Identities, Sense of Community, Online Learning, Structural Equation Modeling (SEM), Undergraduate Students

Introduction

Online learning has been practiced in higher education institutions since the 1990s. Over the past two decades, online learning has been activated in some global institutes (Mahyoob, 2020). Through these years until now, the evolution of online learning has never stopped. Online learning has become a best friend of higher education institutions for some years, and its

transformation is not a novel phenomenon anymore (Kopp et al., 2019; Leszczyński et al., 2018). Hence, higher education institutions should always prepare for any challenge or circumstance by developing strategies and new kinds of offerings in online learning for their students, including recruiting potential professionals to provide solutions (Sandkuhl & Lehmann, 2017).

The current trend in teaching and learning has shown that many higher education institutions in the world have digitised their course content and assessment, which will be used in the teaching and learning processes. According to Grosseck et al. (2024), the integration of digital assessment tools can improve learning outcomes and align higher education practices with 21st-century educational goals. This trend showed significant growth over the last decade, as the Internet and education are combined to provide people with the opportunity to gain knowledge and skills.

Even though knowledge matters in an online course, it is crucial for students unlikely to feel isolated during that course. The nature of online learning, especially during COVID-19, where students are physically isolated from their peers, should emphasise that each student should feel connected, belong, and be part of a particular group in the online class. Some literature has found that online learning can provoke anxiety, loss of identity, and disorientation in learning (Kop et al., 2011; Mackness, 2013; Knox, 2014).

McGuire (2013) stated that the encouragement in the sense of community from the lecturer in classes can foster deep learning due to interaction among students. When students can reformulate the class material to support and challenge one another, they are more likely to retain and apply those lessons in the future. Similarly, Drouin (2008) found that students' sense of community played an important part in their level of satisfaction with online courses. Hence, students are more willing to participate in future online courses.

Furthermore, instead of students participating only in online learning platforms, they also created Facebook and Twitter groups outside of the online classroom as a means of peer support. Although a relatively small number of students participated in the groups, the creation of these outside groups indicated a need, at least for some of the students, for the community beyond the forums provided within the course proper (Blackmon & Cullen, 2016; Saadatdoost et al., 2019). The in-course discussion forum area was the only area for open discussion between the students in the class. Instead of using a forum within an online platform alone, they also used other social networking outlets.

Background of Problem

One major problem encountered in the online learning environment is the separation between the instructor and the student and between the students. Students face phenomena such as dropout rate and loss of motivation due to separation in online learning (Stoytcheva, 2021) and disconnection with classmates or losing human touch (Khalili, 2020). This situation worsens during the COVID-19 pandemic because students are prohibited from leaving their houses and lack interaction with their peers (Irawan, Dwisona & Lestari, 2020). The feeling of isolation is due to a lack of awareness and understanding of presence (Khodabandelou, 2013). Presence is the main aspect that provides the structure of the community of inquiry. However, understanding presence in online learning is complex due to the separation of the physical space of the real world and the online space, as our sense of presence is felt and experienced in

different ways. In the physical space, presence is easier to recognize through observation and perception, but in the online space, presence needs to be intentionally created (Lehman & Conceicao, 2010).

Limited research has been found to explore the sense of community in a completely online format especially during the COVID-19 pandemic. Most research focused on blended courses with face-to-face instruction (Lin & Gao, 2020). Likewise, some research on the sense of community in online learning found to examine the relationship between a sense of community with social media such as Facebook (Al-Omoush, Orero-Blat & Ribeiro-Soriano, 2021; Yilmaz & Yilmaz, 2022) without trying to examine the effects of online learning platform such as Zoom, Google Meets and Microsoft Teams.

Additionally, limited work has been carried out to examine how identity is expressed within diverse online learning contexts (Delahunty, 2014; Luzon, 2018). Ke et al. (2011) posited that limited work has also been conducted to examine how identity relates to the knowledge-building processes within the online educational space. An overall observation from the literature suggests that the dimensions of identities remain debatable (Khalid, 2018). The majority of previous research has been conducted in other countries, with only a few in Malaysia. The investigation of research papers on students' identities in Malaysia within the primary international databases such as Google Scholar found only a few studies related to students' identities in online learning. The studies found are by Shafie, Nayan and Osman (2012), which focused on constructing identity through Facebook profiles, and by Khalid (2019), which focused on students' identities and engagement in an online learning community.

Objective

- i. Determine the extent of sense of community and students' identities in online learning among undergraduate students in Malaysian public universities.
- ii. Determine whether the students' identities significantly influence sense of community in online learning among undergraduate students in Malaysian public universities.

Literature Review

There are three points will be discussed in literature review which are students' identities, sense of community and relationship between students' identities and sense of community.

Students' Identities

Traditional conceptions identify an individual within perceivable social identity groups, such as those based on age, gender, ethnicity, socio-economic status, class, nationality, disability, and religion (Abrams & Hogg, 1990; Turner & Haslam, 2001). Identity can also be defined by self-categorization of educational background, work or professional experience or differences in language and culture (Turner et al., 1987). Ke et al. (2011) identified identity as a presence of sociocultural position or self-categorization trajectory expressed or revealed by students in online discourses. Tomlinson (2010) stated that identity is also a fluid and flexible process, depending on the individual's ability to shape, adapt, and apply the self to the needs of a particular role not only once but many times throughout life.

From a sociocultural perspective, human activity is mediated by language in interacting moments, which is intrinsically linked to consciousness and higher mental functioning (Vygotsky, 1978). Although Vygotsky did not talk about identity as much, a sociocultural

approach to forming identity is considerable when individual functioning is inseparable from sociocultural processes. The centrality of dialogue in the community and the co-construction of knowledge coupled with its centrality in the construction of identity in continual negotiations between oneself and others. Identity formation is, therefore, as much about sociocultural processes as the individual (Delahunty, Verenikina, & Jones, 2014).

When applied to the context of the online classroom, the discourses in various online discussion forums are composed by learners as a means of presenting identity by communicating who they are and how they see others, alongside discussing content-related issues. Hyland (2011) mentioned that in most written academic genres, academic identity relates to the construction of a credible academic persona by using the discourses and language forms of the community. Consequently, when social interactions occur in the online community, the text is where knowledge and the writer's identities are constructed, negotiated, and created. When dealing with academic writer identities, Lo, Othman and Lim (2024) mentioned that students engage in complex processes of self-representation, drawing on their personal backgrounds and prior experiences to align with the norms and expectations of academic discourse communities.

Khalid (2019) identified students' identities in online learning as consisting of four (4) identity dimensions: personal, professional, learners, and community members. According to Durante (2011), the construction of personal identity is always the result of competition (both internal with ourselves and external with others) between what is disclosed and hidden about us. For example, people usually hide their age. It is sensitive for some people to reveal their age to others. Thus, from this standpoint, personal identity is predetermined as the unending result of a selection of information that forges a meaningful difference (i.e., the self) between what we wish to unfold and what we wish to keep secret.

Developing a professional identity is influenced by cultural identity and acculturation processes. Individuals integrate personal and professional identities over time, navigating cultural nuances to establish a cohesive professional self (Hyun, Song & Yang, 2023). Jackson (2017) described the professional identity of students as pre-professional identity, which is an understanding of and connection with the skills, qualities, conduct, culture, and ideology of their intended profession. In terms of learner identities, Lawson (2014) mentioned how individuals feel to the extent of how they describe themselves as a learner. Thus, this may be affected by intrinsic and extrinsic factors, such as personal motivation, a sense of belonging, support and encouragement from others, and previous educational experiences.

Meanwhile, Wann (2006) mentioned that community identification is present when team members relate well with their partners, thus enabling social connection development as they understand mutual interests. Ratanakosol, Pathumcharoenwattana and Kimpee (2016) argued that it is important to individuals, groups, and communities as the driving force that can create pride, self-respect, unity, a sense of belonging, and social responsibility, which leads to participation in community activities. Hence, in order to construct community identity in an online learning environment, participants must be aware of their roles as members of that online community and their openness to sharing knowledge, discussions, topics, and comments from others.

Sense of Community

Even though knowledge matters in an online course, it is crucial for students unlikely to feel isolated during that course. The nature of online learning where students are physically isolated from their peers, should emphasise that each student should feel connected, belong, and be part of a particular group in the online class. Some literature has found that online learning can provoke anxiety, loss of identity, and disorientation in learning (Kop et al., 2011; Mackness, 2013; Knox, 2014).

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Furthermore, instead of students participating only in online learning platforms, they also created Facebook and Twitter groups outside of the online classroom as a means of peer support. Although a relatively small number of students participated in the groups, the creation of these outside groups indicated a need, at least for some of the students, for the community beyond the forums provided within the course proper (Blackmon & Cullen, 2016; Saadatdoost et al., 2019). The in-course discussion forum area was the only area for open discussion between the students in the class. Instead of using a forum within an online platform alone, they also used other social networking outlets.

Students' Identities and Sense of Community

Exter (2009) stated that the sense of community would be negatively impacted if students felt unknown or anonymous. The need for recognition is intrinsically linked to being able to portray who we are. Identity construction has potential ramifications on motivation to participate, the extent of self-disclosure, as well as on self-confidence and self-assurance. Feelings of belonging to a community have been identified as a core element in the construction of salient and robust working and student identities (Caravallo Johnson & Watson, 2004). Luzon (2018) stated that the discussion forums are the vehicle through which insights into feelings of belonging or isolation, legitimacy of self, or lack thereof, will become apparent.

Kear, Chetwynd and Jefferis (2014) studied the use of personal profiles and photos in online learning. The result indicated that personal profiles and photos help the other students feel connected with each other, while on the other hand, some students are concerned about privacy when sharing their profiles and photos. In their study of the isolation of online graduate students, Phirangee and Malec (2017) expressed that students feel more socially connected if their identity is appreciated and valued by others. Furthermore, a study by Verdin et al. (2018) revealed that the engineering identity of first- generation college students has a positive direct effect on students' sense of belonging since they believe in themselves as engineering people and living with people with the same interests, they can feel a sense of belonging in that field.

Jaiswal, Magana and Ward (2022) used a pre-and post-test survey to examine students' perceptions about identity formation and sense of belonging in the data science learning community. Both the pre-and post-test surveys demonstrated that students' identity formation and sense of belonging improved as they progressed through the semester. Meanwhile,

McNamara et al. (2021) investigated community identity with social support, loneliness, and well-being. The result indicated that neighbourhood belonging is a positive predictor of well-being and social support while a negative predictor of loneliness. Furthermore, Ratanakosol et al. (2016) concluded in their study that community identities are crucial in creating pride, self-respect, unity, a sense of belonging, and social responsibility for all parties in the community. Thus, it is hypothesized that:

H1: Students' identities are significantly influencing sense of community in online learning among undergraduate students in Malaysian public universities.

Methodology

This study adopted a correlational research design to investigate the possibility of relationships between these variables without any attempt to influence or manipulate them (Fraenkel et al., 2015). This study was conducted at Malaysian public universities under the Ministry of Higher Education. These public universities are categorised into three (3) groups: five (5) research universities, four (4) comprehensive universities, and 11 focused universities. Thus, the selected universities in this study were based on those groups.

The targeted population for this study were undergraduate students who were studying online learning courses at Malaysian public universities. According to the data given by the university administration on the number of active undergraduate students, there was a total of approximately 13,701 undergraduate students.

Stratified random sampling was used as the sampling technique. The selected universities were contacted via e-mail and phone calls. However, only three (3) universities from research, one (1) university from comprehensive, and four (4) universities from focused universities responded, respectively. Subsequently, only one (1) faculty was randomly selected from each responding university using the fishbowl technique.

To confirm the sample size, Cochran's formula (1977) for continuous scale was used and the estimated final sample size was 262. Salkind (1997) recommended increasing the sample size by 40% to 50% if the researcher is mailing out the surveys in order to account for lost mail and non-response answers. Therefore, the researcher has decided to add 40% (105 more respondents) to the sample size, making the final total recommended sample size for this study 367. Structural Equation Model (SEM) analysis was used to determine the influence of students' identities on sense of community.

Research Findings

Extent of Sense of Community

This study used the Classroom and School Community Inventory (CSCI) by Rovai, Wighting, and Lucking (2004) to measure the respondents' sense of community. The CSCI comprises two constructs, known as the classroom and the university. The mean summated sense of community scores was computed as a mean ranging from 0 to 4. The mean above 2.5 indicates the respondents are more inclined, while below 2.5 indicates the respondents are less inclined.

As presented in Table 1, the respondents' overall perception of a sense of community is more inclined ($M = 2.593$; $SD = 0.638$). The results also indicated that the respondents are more inclined to go to university ($M = 2.663$; $SD = 0.757$), while in the classroom, their perception is slightly more inclined ($M = 2.522$; $SD = 0.763$). The results reflect that students feel closer to the university than their classmates. They feel that the university can satisfy their educational goals and their learning. During the pandemic, universities are active in updating students about guidelines and standard operating procedures to make them feel like they belong to the university.

Table 1: Extent of Sense of Community

Construct	Sub-constructs	Mean	Standard Deviation
Sense of Community	Classroom	2.522	0.763
	University	2.663	0.757
	Overall	2.593	0.638

Extent of Students' Identities

The students' identities were assessed using the Students' Identities Questionnaire developed by Khalid (2010). The mean summated students' identities were computed as a mean score ranging from 1 to 5. The mean above 3.5 indicates the respondents are more inclined, while below 3.5 indicates the respondents are less inclined.

Table 2 shows that the respondents' overall perceptions of students' identities are more inclined ($M = 3.992$; $SD = 0.565$). The results also indicate that the respondents expressed more inclinedness towards both sub-constructs, namely professional identities ($M = 4.008$; $SD = 0.605$) and learner identities ($M = 3.970$; $D = 0.649$). Thus, it indicated that students have professional identities in their online learning. They can participate in online learning groups to get new ideas; they know how to search for online learning course groups, and online learning can give them extra support to improve themselves.

Table 2: Extent of Students' Identities

Construct	Sub-constructs	Mean	Standard Deviation
Students' Identities	Professional Identities	4.008	0.605
	Learner Identities	3.970	0.649
	Overall	3.992	0.565

For learner identities, students expressed that they could manage their assignments better through sharing experiences in online learning since they are being provided with guidelines and exposure from lecturers and friends on how to manage the task. Students also feel that engaging in online learning is beneficial for their professional development, expands their networks, and enhances their computer skills.

Students' Identities and Sense of Community

H1: Students' identities significantly influence a sense of community in online learning among undergraduate students in Malaysian public universities.

As illustrated in Table 3, there was a negative yet no significant influence of students' identities on sense of community in online learning ($\beta = -0.068$; C.R. = -0.620; $p = 0.535$). Based on the structural model, H1 was not supported in this study.

Table 3: The Regression Weights in The Hypothesise Direct Model on Effect of Students' Identities on Sense of Community

Hypothesised Relationship	B	S.E.	β	C.R.	p
Students Identities \rightarrow Sense of Community	-0.066	0.106	-0.068	-0.620	0.535

Note: B (unstandardized regression weight); S.E. (standard error); β (standardized regression weight); C.R. (critical ratio); p (level of significance)

In this study, students' identities did not serve as a mechanism to improve a sense of community in online learning. This is because students do not view their identity as a shared identity that blends them as one with other people, which can hinder the feeling of unity, belonging, togetherness, and community spirit. As Byrd (2016) posited, sharing a part of your identity with someone else will increase your connection and cohesion with others. In compliance with what Exter (2009) stated, if students fail to portray themselves, it will negatively impact the sense of community.

It should be noted that the current findings are at odds with a significant body of literature. Kear, Chetwynd, and Jefferis researched online learning and the usage of personal profiles and images in 2014. The result indicated that personal profiles and photos help the other students feel connected with each other, while on the other hand, some students are concerned about privacy when sharing their profiles and photos. In their study of the isolation of online graduate students, Phirangee and Malec (2017) expressed that students feel more socially connected if their identity is appreciated and valued by others.

Meanwhile, McNamara et al. (2021) investigated community identity with social support, loneliness, and well-being. The result indicated that neighbourhood belonging was a positive predictor of well-being and social support, while it was a negative predictor of loneliness. Furthermore, Ratanakosol et al. (2016) concluded in their study that community identities are important in creating pride, self-respect, unity, a sense of belonging, and social responsibility for all parties in a community.

Discussion and Conclusion

The results of the study illustrated that the students' identities were more inclined overall. The results also indicated that both professional identities and learner identities were high. Based on these results, it might be that students feel that they have good identities, either as professionals or as learners, in online learning. They can participate in online learning groups to get new ideas; they know how to search for online learning course groups, and online learning can give them extra support to improve themselves.

The findings indicate that students' perceptions of a sense of community were less inclined. As a sense of community is a crucial element in guaranteeing the success of an online learning environment, it has been suggested that lecturers establish a social presence so students can feel that they are interacting with real people. Thus, this is practicable by instructing students to create an introductory video using video applications or something as simple as PowerPoint,

where everyone introduces themselves and shares facts about themselves. Besides, the lecturer must be available during the online class.

Hence, this requirement is attainable by turning on the camera and microphone. However, the lecturers need to be more perspective with voice tone and vocal functions since body language and facial expressions are limited during online learning. By slowing down the speech, students can capture the essential points of the topic discussed (Mahmood, 2021; Bao, 2020).

The findings also revealed the moderation level of the sense of community in the classroom. Hence, the suggestion is to assign students to smaller groups. They can use the learning management system to work together and associate with their peers. Some students may be hesitant to share if there are many members in the group. These smaller groups can provide more personal experience and connect individuals with similar interests. Besides, this allows the lecturer to be more focused-oriented in a small group (Vollbrecht, Porter- Stransky & Lackey-Cornelison, 2020). On top of that, exposure to collaborative learning techniques during online class sessions can help the students since getting to know their peers in an online class can help them reduce feelings of isolation. For example, a lecturer can ask students to make assignments in groups collaboratively by using applications such as Google Docs or Google Sheets so they can discuss, edit, and comment on the assignment synchronously.

The active involvement of the university in online learning will lead to the successful creation of a sense of community among students. This is based on the result of this study, which indicated that the level of sense of community at the university is high. Hence, it is suggested that universities use their existing communication tools when in-person engagement is impossible. Universities can use their official social media, such as Facebook or Instagram, websites, email, and learning management systems, to keep students updated on the latest news or announcements. In addition, the university's learning management system also enables campus-wide announcements. Therefore, using the right communication platform can strengthen connections with students and build a sense of community among students and universities.

In order to feel connected to the institution and to develop a sense of community, students have to apprehend that their opinions and feedback are heard, especially during this strenuous period. Universities or administrators should organise regularly scheduled meetings, workshops, and other events to check students' well-being and remind students that universities are always there to support them.

Some universities advise their students to move to activities such as maintaining studies, reading a book or virtual book, listening to podcasts, figuring out a new hobby or skill, joining a movie club, an online group, or a peer forum while staying at home (Gamage et al., 2020). Apart from that, universities can also support students according to their needs. As it is known, students' requirements differ based on their programme, years of study, or location. For example, first-year students need more support in establishing the course programme and peer connections, while last-year students need access to industry and career development counselling. Under the economic lockdown and recession, more final-year students may have difficulties finding jobs or internships, which could negatively affect their engagement in learning and lower their well-being (Plakhotnik et al., 2021).

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In an online class, it is difficult for the lecturer to identify if the students understand the topic and material, especially when they turn off the camera. There is no expression of confusion if they are not visible, even if they do not understand the topic or content. As such, students must be willing to approach the lecturer with questions. For instance, if a student does not understand the discussed topic, they can use the raise-hand function to ask the question so the lecturer can provide the answer.

Students could also give their best commitment to online learning. Most students fail their online courses due to a lack of commitment. For example, they are joining the Zoom session during an online class, but the truth is they are not sitting in front of the laptop to participate in the class. As a student, they must be proactive, ask lots of questions, and participate in all learning activities. This will lead to a self-motivated personality in which students will give their best and be eager to accomplish a goal.

The findings of this study also found no significant influence between students' identities and sense of community in online learning. This could probably be because, in order to increase a sense of community, a strong relationship in the community should be developed rather than solely focusing on individual identity. Lecturers or course instructors need to come up with ideas on how to include the different identities of students in socially engaged learning that may help to increase students' engagement behaviourally, emotionally, and cognitively, thereby positively creating a well-bonded online learning community.

Students' identities did not serve as a mechanism to improve a sense of community in online learning. This is because students do not view their identity as a shared identity that blends them as one with other people, which can hinder the feeling of unity, belonging, togetherness, and community spirit. As Byrd (2016) posited, sharing a part of your identity with someone else will increase your connection and cohesion with others. In compliance with what Exter (2009) stated, if students fail to portray themselves, it will negatively impact the sense of community.

Recommendations For Future Research

Several recommendations are suggested for future research to overcome the limitations of this study. This study employed a quantitative approach, and the data collection was obtained through an online survey using a questionnaire. Therefore, a comprehensive perspective is achievable if considering a qualitative approach, such as interviews, observations, and recordings in future research. Hence, extensive qualitative research can support and accurately interpret the quantitative data.

The current study focused on knowledge building and a sense of community among undergraduate students in Malaysian public universities. The target population can be further studied at private universities to determine the similarity of the results.

Future research may also need to examine the mediating effect of possible determinants to expand on more empirical findings. Likewise, future research is crucial to explore how sense of community and students' identities could work together with moderating factors such as motivation and self-efficacy to determine more conclusively the impacts of sense of community.

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