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Teaching Internationally, Learning Collaboratively: Intercultural Perspectives on Information Literacy and Metaliteracy (IPILM)

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Abstract

Intercultural Perspectives on Information Literacy and Metaliteracy (IPILM) is a discourse-oriented learning environment that engages students from diverse cultural backgrounds to participate in collaborative knowledge construction. The objective is to evolve a thematic approach to course design that includes elements of open pedagogy, information literacy, and metaliteracy. IPILM invites participation from educators and learners from around the world and has witnessed an increase in participating countries. This paper describes the concept of IPILM and demonstrates the implementation of this approach in practice. The initiative was well received by students and is both feasible and sustainable as an intercultural learning endeavor. IPILM is an ongoing project and a work in progress that is an adaptable model which may be transferred to disparate fields of teaching and learning or adopted by international communities of instructors.

Keywords: information literacy, metaliteracy, intercultural, virtual exchange, open education, pedagogy

Special issue exploring the intersections between information literacy and open educational practices

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Teaching Internationally, Learning Collaboratively: Intercultural Perspectives on Information Literacy and Metaliteracy (IPILM)

Intercultural Perspectives on Information Literacy and Metaliteracy (IPILM) is a discourse-oriented learning environment for learners from diverse cultural backgrounds to engage in collaborative knowledge construction. It is an evolving and thematic approach to innovative course design that continues to expand participation from educators and learners worldwide. The teaching approach involves attributes of open pedagogy (Hegarty, 2015), information literacy, and metaliteracy (Mackey & Jacobson, 2011).

This paper describes the concept of IPILM and provides examples from the winter term 2021/2022 iteration to demonstrate the implementation in practice. Students and instructors from five countries (Austria, Bosnia and Herzegovina, Germany, India, United States) were involved in collaborative discourse and knowledge construction. The authors see this concept as a low-threshold approach to realize a learning environment that

- fosters intercultural learning among students from different countries,
- encourages peer review and collaborative feedback ,
- highlights the learner as producer role, and
- explores topics related to the information environment.

IPILM is a flexible course model appropriate for international communities of instructors from various disciplines. This paper introduces the concept of IPILM, explains the design and content of the IPILM course in winter term 2021/2022, and describes experiences gained with regard to feasibility, learner engagement, and learning outcomes.

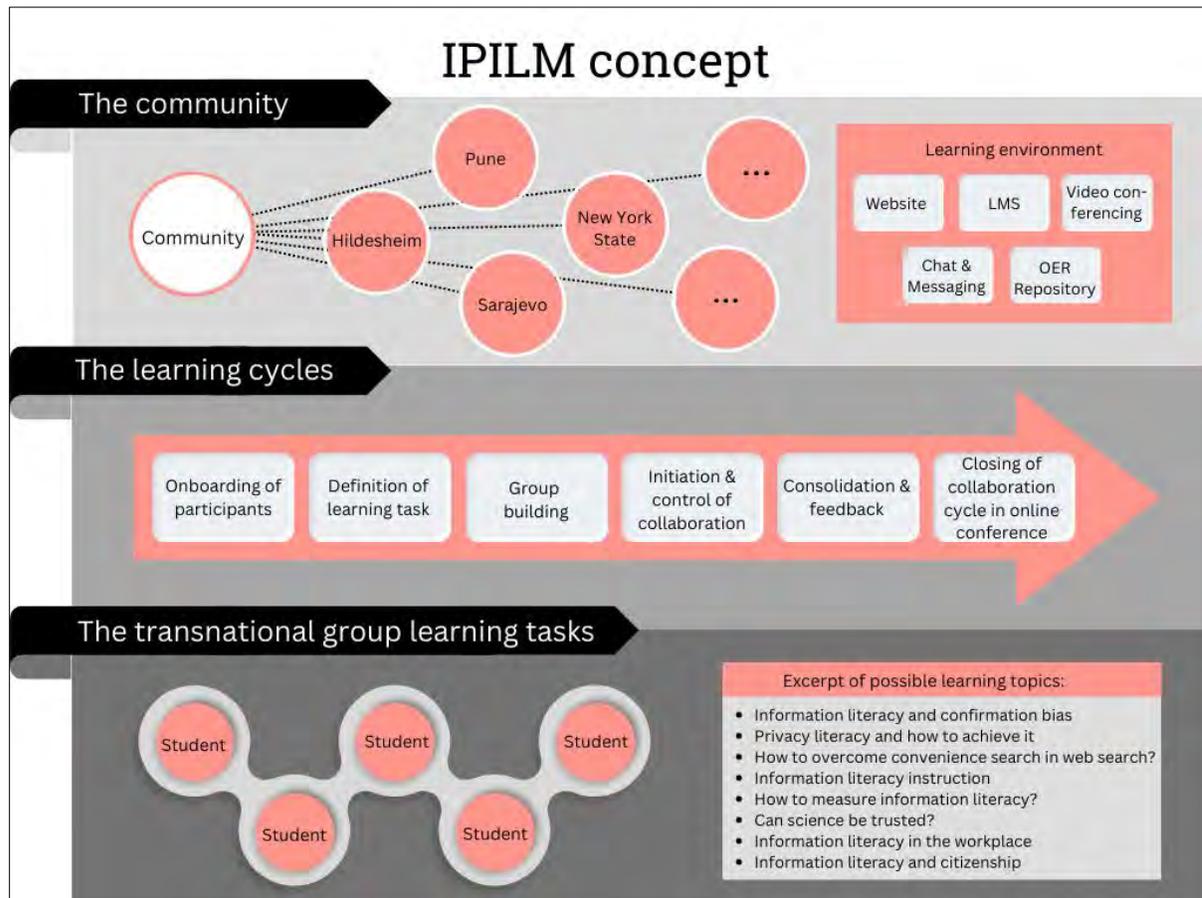
The Educational Concept of IPILM

Information literacy is more important than ever (Morgan, 2018), especially as new technologies (e.g., artificial intelligence) provide more opportunities to spread disinformation. Metaliteracy is a holistic model that envisions the learner as a collaborative producer of information in social settings (Mackey & Jacobson, 2022). In addition to the vital importance of information literacy and metaliteracy in an interconnected world, there

is a need to prepare students to become more knowledgeable about different cultures and global perspectives (Velayo, 2012). Therefore, it can be argued that educational settings covering multilingual and multicultural aspects of information literacy and metaliteracy are increasingly relevant (Nowrin et al., 2019).

IPILM aims to achieve learning that is diverse, realizes intensive collaboration, and initiates critical discourse. This concept is based on a learning environment with three interrelated components: Community, Learning Cycle, and Transnational Group Learning. Figure 1 illustrates the concept.

Figure 1: The Concept of IPILM



The Community

The IPILM community consists of faculty from several countries. This international community of practice consists of instructors who facilitate the organizational (e.g., schedule for learning cycles) and technological infrastructure (e.g., video conferences) to conduct transnational group learning scenarios. It is noteworthy that there are low or no

thresholds for participation. This is realized by the principle of *joint learning and local certification*, which means that students learn collaboratively but earn credentials at their home institution. Students participate in IPILM as they take part in courses at their university, which can partly or wholly connect to the IPILM learning cycle. This allows for flexible and short-term involvement in IPILM through collaborative planning among the project team. Participating instructors seamlessly register their students (e.g., from a current class) as a strategic expansion of their regular teaching. There is no need for formal learning agreements between institutions because IPILM links to courses at the home institutions, and the model is flexible enough to comply with different administrative regulations.

On the technological side, all students are provided free of charge with an open-source software-based learning environment that adheres to the European Union's General Data Protection Regulation (GDPR). It includes the necessary tools for collaboration, communication, and data sharing.

The Learning Cycles

The learning cycle provides a frame to coordinate and execute the collaborative learning processes in transnational groups. This approach to organizing the learning experience includes onboarding learners, defining learning tasks, group building, initiating and facilitating discourse and learning processes, feedback on learning results, and closure of learning activities.

At the end of each learning cycle, students present their work at a public event, e.g., an online conference. In this way, students receive peer feedback from outside the community and disseminate their work as OER (e.g., through online screencasts).

The Transnational Group Learning Tasks

In the group learning tasks, students engage in knowledge construction through intercultural communication. Teams of four to six students from at least two countries unite in learning activities designed to generate knowledge, support intercultural communication, and foster scientific literacy and critical thinking. This can be achieved via learning scripts that structure the learning process on an epistemic and organizational level (Cress et al., 2015).

The first IPILM course started in winter 2019/2020 as a cooperation between University of Hildesheim (Germany) and Symbiosis College of Arts & Commerce Pune (India). This

course realized core components of the educational concept of IPILM, such as transnational group learning. The group tasks were refined in winter 2020/2021, and the learning cycle was supplemented with a closing online conference. It is expected that the concept, as mentioned above, will continue to be refined and developed in future iterations of IPILM courses. In this sense, IPILM can be related to design-based research as it is focused on designing and testing ideas in multiple iterations, each leading to incremental improvements described, e.g., by Anderson and Shattuck (2012).

Theoretical Considerations of IPILM

In a dynamic social environment, it can be demanding for learners to navigate the magnitude of information and to know what is reliable. Information evaluation is complex and challenging (Breakstone et al., 2019; Fraillon et al., 2020; McGrew, 2021). Information literacy aims to empower citizens to seek, evaluate, use, and create information effectively to achieve their personal, social, occupational, and educational goals (UNESCO, 2013). The definitions of information literacy vary across the countries represented, and therefore the instructors did not precisely align a specific one with the IPILM concept. However, for those implementing elements of the *Framework for Information Literacy for Higher Education* (Association of College and Research Libraries, 2015), the flexibility of IPILM allows for specific connections between course content and the frames, and the same is true for other conceptions of information literacy. IPILM fosters information literacy of the participants as it widens the scope of learners' information horizons through active participation in the information environment.

Metaliteracy reframed information literacy as a comprehensive approach to learning for engaging with emerging technologies and social environments (Mackey & Jacobson, 2011). It is a holistic model that encompasses four domains of learning (affective, behavioral, cognitive, and metacognitive), learner roles (from producer to publisher), and associated characteristics (from adaptable to civic-minded) (Mackey & Jacobson, 2022). While less widely known than information literacy, metaliteracy research shows the applicability of the concept. First, Michelot et al. (2022) conducted a transnational quantitative study among preservice teachers in three French-speaking countries to investigate the relationship between critical thinking and metaliteracy self-efficacy. Second, Dora Sales Salvador (2022) analyzed the application of metaliteracy in a fully online information literacy course at the Universitat Jaume I in Spain. Finally, Katie S. Greer (2023) conducted a preliminary qualitative study in an undergraduate asynchronous online library course in the United

States to investigate the relationship between “pedagogy of care” and the affective domain of metaliteracy.

IPILM also incorporates attributes of open pedagogy (Hegarty, 2015), including the use of participatory technologies, learner-generated content, peer review, sharing ideas and resources, and the cultivation of a connected community. Participatory technologies promote collaboration and active engagement. Learner-generated content fosters creativity and ownership, while peer review cultivates collaboration and critical thinking. Finally, sharing ideas and resources enables learners to build on each other’s knowledge and expertise, contributing to a culture of open knowledge exchange.

The IPILM concept is similar to Collaborative Online International Learning (COIL), which usually involves small groups connecting faculty and students from at least two institutions. COIL is “a new teaching and learning paradigm that develops cross-cultural awareness across shared multicultural learning environments” (Rubin, 2017, pp. 33-34). COIL realizes “team-taught learning environments where teachers from two cultures work together to develop a shared syllabus” (Rubin, 2017, p. 34). The courses provide “students with new venues in which to develop their cross-cultural awareness” (Rubin, 2017, p. 34). IPILM is larger in scope than typical COIL courses that involve faculty from two cultures working together. It aims for the ongoing execution of virtual exchange and is flexible concerning the number of participating institutions. This approach also expands intercultural awareness and multicultural understanding as another key theme of the learning experience.

The learning cycle offers multiple benefits for students, teachers, and the wider online community: Consistent with metaliteracy, learners in IPILM are encouraged to act as teachers in collaborative problem-solving situations and at the online conference that concludes the learning cycle (Mackey & Jacobson, 2022). They also take on additional metaliterate learner roles, such as participant, collaborator, and producer of information. The online conference in which students present their results is an opportunity for further discourse and feedback from an audience outside the course. When students realize that their final project may be viewed online, they often perceive that they will engage on a social level beyond typical learning situations. In IPILM, one might expect the positive effects of small group learning, as argued by socio-cultural (Vygotsky, 1978) and socio-genetic (Piaget, 1979) perspectives of collaborative learning. According to socio-cultural perspectives, collaborative learning leads to the joint acquisition of knowledge as the learning partners exchange and combine their different sets of knowledge. Knowledge asymmetries are

reduced in this context, and new ideas and competencies are acquired. Socio-genetic perspectives emphasize the value of socio-cognitive conflict in group learning. When different or opposing views meet, the probability is high that individual knowledge structures will be changed. One may argue that knowledge asymmetries and the likelihood of cognitive conflict are more pronounced in intercultural contexts than in contexts where learners from the same cultural background collaborate. We see IPILM as a knowledge-building and knowledge-creation community, as Scardamalia and Bereiter (2014) argued. Students learn by creating knowledge in discourse.

Furthermore, IPILM can associate with connectivist ideas of socially unlimited learning, as Siemens (2005) argued. In a connectivist context, students are collaboratively creating new information and constructing knowledge as they are tutored by the instructors (Siemens, 2005). The knowledge is shared with “the world,” and theoretically, everyone can use, reflect on and learn from this knowledge, provide feedback, and share additional insights.

The inclusion of transnational perspectives in IPILM is designed to result in a deepened understanding of information through the lens of both information literacy and metaliteracy. Furthermore, by building multinational groups, students encounter viewpoints from other cultural backgrounds that expand those they are accustomed to experiencing at their home institution. Thus, they have the opportunity to develop a broader understanding concerning actors and processes in information markets and perspectives of information evaluation that cultural aspects may also influence.

IPILM in Practice

In winter term 2021/2022, the IPILM course included three primary learning goals:

1. Foster intercultural learning by providing a joint learning space for students from different countries.
2. Learn about information literacy and metaliteracy topics by considering transnational perspectives.
3. Share the knowledge with the world.

To achieve these goals, students conducted research and prepared collaborative presentations about topics related to the information environment. The primary learning objectives for the collaborative assignment included the following:

1. Acquire in-depth knowledge of the chosen topic.

2. Deepen scientific skills.
3. Become experienced with intercultural collaboration.

As part of this culminating assignment, learners strived to create a common knowledge base about the artifacts produced. The learning success of the individual participants involved gaining knowledge on the topics based on the course content and their additional research. Throughout the course, learners worked toward increasing competencies concerning (intercultural) communication and collaboration. The final student learning outcomes were based on collaborative learning activities that culminated in team-based presentations at an online conference and the potential publication of the artifact as an Open Educational Resource (OER).

In the following, drawing on the structure of the educational concept of IPILM, the implementation of IPILM in winter term 2021/2022 is described.

The Community

During the course, eight instructors from five countries formed the community of practice. Figure 2 shows the geographical distribution of these participating institutions.

Figure 2: Participating Institutions



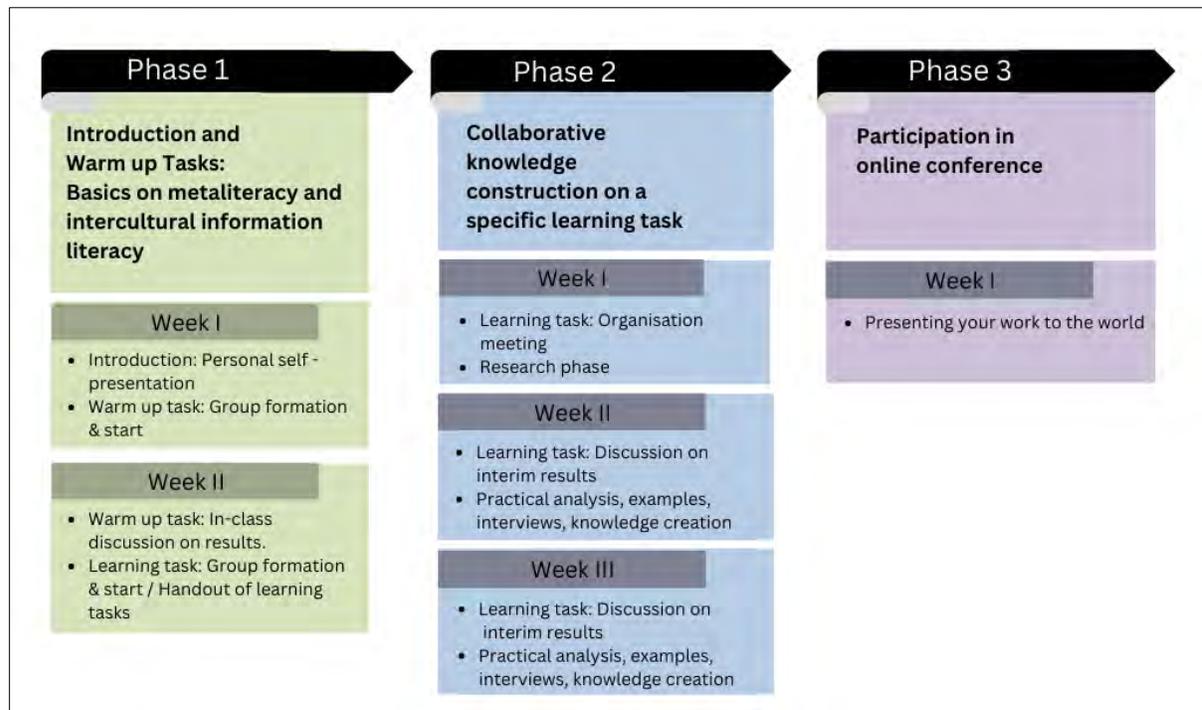
The involved institutions had different technical platforms for their teaching that could not be easily opened for external learners, so the course used its own asynchronous learning environment. For teaching synchronously, BigBlueButton included in a Moodle course was used. Video conference rooms were also provided for the students to work outside regular

class hours. However, students were also allowed to use other synchronous and asynchronous tools for communication and collaboration.

The Learning Cycle

The timeline of the learning cycle consisted of three phases. The aim of these phases and associated learning tasks are shown in Figure 3 and described below.

Figure 3: Timeline of the IPIL learning cycle in winter term 2021/22



For this learning cycle, 35 students registered for the course at their home institution. They came from all the involved countries: United States (6 students), India (15), Germany (5), Bosnia and Herzegovina (8), and Austria (1). The actual student body was even more international, as several Indian students were based abroad (e.g., in the UAE). The students were from disciplines such as information science, economics, and humanities. At each institution, there were different processes for onboarding the students. The students and instructors were invited to post a short self-presentation on the course forum in Moodle to bring the students into the shared learning environment before the start of the course.

Considering the distance between the involved partner institutions, classes always took place at 2 p.m. Central European Time (CET), which allowed participation from the United States in the morning and India in the evening. The course was conducted compactly from

the end of October to the beginning of December to align the academic year's different schedules at the involved partner institutions. Even this accelerated time frame caused some hurdles. For example, for the Indian students, the time frame overlapped with exam schedules. The individual instructors resolved such challenges.

Phase 1: Introduction & Warm-up Task: Basics of Metaliteracy and Intercultural Information Literacy

The first-course phase aimed to unite everyone as a shared learning community and build common ground on metaliteracy and intercultural information literacy. This approach considered that the students came from different disciplines with different levels of previous knowledge.

In the first class, the instructors introduced themselves and provided a comprehensive overview of the course and the learning environment. Student groups were formed to ensure cultural diversity, and group work was initiated online. An icebreaker activity invited each student to explain their name's origin and share one facet of their country they were proud of. This activity was conducted within the groups before being presented to the entire class. As homework, students read two suggested texts on metaliteracy and intercultural aspects of information literacy. They submitted a short summary of the texts, capturing the core statements and reflecting on their quality. Later they met in the same groups and discussed their experiences and expectations regarding scholarly work to avoid misunderstandings. The discussion described above was then presented as a group reflection on intercultural aspects of information literacy and metaliteracy and possible impacts on their personal learning in the plenum.

Phase 2: Collaborative Knowledge Construction on a Specific Learning Task

After accomplishing phase 1, students were ready to get into in-depth learning and collaborative knowledge construction. Therefore, they were given specific learning tasks described in the group learning tasks section. As part of this phase, students presented their group work to the entire class and received substantial feedback.

In addition to expanding intercultural competence, collaborative knowledge construction in transnational groups sharpens students' argumentative skills. It stimulates in-depth insights that reach beyond understanding local conditions and contexts. Feedback was provided in specific synchronous sessions in which the whole class participated, and the instructors collaboratively offered feedback to the transnational groups about their learning processes

and outcomes. Furthermore, all students were invited to share their thoughts about the work of other groups.

Phase 3: Participation in the Online Conference

At the end of the learning cycle, the instructors organized an online conference to encourage the students to share their new information literacy and metaliteracy knowledge with the wider online community. This half-day virtual event was advertised on the project website (<https://ipil.blog.uni-hildesheim.de/online-conference-in-january-2022/>) and disseminated among the personal professional networks of the instructors and partner institutions. As a technical platform BigBlueButton, a local WordPress installation, and YouTube were used.

The instructors opened the conference with an introduction to the IPILM project. This was followed by student sessions where the groups shared their findings. Afterward, there was an opportunity to discuss each session with the conference participants. The audience of the conference consisted of international experts in the field, students not involved in the course, and others interested in the topic. Students participated in plenum discussions and video conference room chats. The conference ended with a workshop where participants discussed the concept of IPILM.

After the conference, the course ended with a synchronous live session. The aim was to reflect on the course, including the learning and knowledge gained, the conference, and the nuances of intercultural learning.

Individual instructors did assessments at the end of the learning cycle at the participating institutions in accordance with local grading regulations. In general, it was based on active student involvement and the quality of the learning outcomes presented by the students. In some cases, additional submissions were required, e.g., the students from Germany had to hand in a learning diary after the end of the class. If the project team determined that the final projects were suitable for publication, the students were invited to share their work as OER (<https://www.youtube.com/channel/UCWoQVgIkajEOG4qVZHdTXcw/videos>).

The Group Learning Tasks

The instructor community designed learning tasks. First, instructors collected topics reflecting current issues from the information environment across institutions and disciplines. The instructors afterward voted on the topics to develop a list suitable for the number of enrolled students. After this process, students were invited to vote on their

favorite topics. The aim was to secure students' learning motivation by giving them a say regarding their personal interests in learning topics. There were twelve topics to choose from, out of which the students selected the following five:

- Google as an information gatekeeper
- Technology changes and information literacy
- Impact of fake news on financial markets/companies
- Research and enhance an existing *Wikipedia* article draft about metaliteracy
- Spreading misinformation during the COVID-19 crisis—did national media channels run awareness campaigns?

During the following classes, students worked in groups on their topic in four sub-phases:

1. Group organization: Group formation and specification of learning task goals, collaboration tools, roles and responsibilities.
2. Research phase: Building a solid knowledge foundation and compiling an overview of the field's existing (scientific) knowledge.
3. Acquiring practical insights and applying the knowledge compiled in the research phase.
4. Bringing it all together and creating an artifact that others could use to learn about the topic of the learning task.

The students received detailed written instructions for each subtask, which were also discussed during the synchronous sessions. They submitted research summaries and visual presentations that were discussed in class. Students had the opportunity to discuss the results and received feedback (as described in the learning cycle). Finally, students were invited to create a video-recorded presentation of their outcomes for the final conference. The design of the learning tasks provided the students with a frame for the learning outcomes (e.g., by placing them into international groups to foster collaborative learning) and also allowed the students to control parts of the learning outcomes themselves (e.g., by choosing the methodology to solve their learning task and the nature of the final artifact).

Scaffolding

IPILM is almost certainly unlike any other course that students have taken. While some components will be familiar, such as online discussions and working in teams, this

international experience also has distinctive elements. Throughout this course, the instructors provided scaffolding, or support, to assist student learning. The instructors also encouraged scaffolding through peer reinforcement in team-based activities and a culminating project and presentation. “Scaffolding has been characterized traditionally as a process during which an expert supports learner accomplishment of a specific task or attainment of a specific goal” (Sharma & Hanaffin, 2007, p. 28). It is influenced by Vygotsky’s (1978) concept of a *Zone of Proximal Development (ZPD)*, which involves both “independent problem solving” and “problem solving under adult guidance or in collaboration with more capable peers,” suggesting a role for both teachers and classmates in this supportive process (p. 86). In the IPILM course, one crucial scaffolding component was provided by metaliteracy as a holistic framework for collaborative teaching and learning (Mackey & Jacobson, 2022). While metaliteracy is studied as a course topic in IPILM, it also introduces students to a mindset that has the potential to impact their learning going forward (Mackey & Jacobson, 2022, pp. 20-21). Its learning domains, roles, and characteristics help students to process their learning and think of themselves as multi-faceted and ethical information producers (Mackey & Jacobson, 2022, p. 21-34). By reflecting on their metaliterate roles in IPILM, such as communicator, participant, teacher, and producer, learners gain valuable insights about their experience in the IPILM course, including the final group learning task, while learning to work together in ways that will be valuable in future endeavors.

The integrated online platform students and faculty use is designed to encourage synchronous and asynchronous collaboration. A shared instance of the Moodle platform provides a common space for all course participants to interact during scheduled real-time meetings and to access course content at their own pace. During the synchronous sessions, for instance, the instructors provide scaffolded learning support by organizing teams, describing team activities, and providing detailed feedback on drafts of their final project. In addition, learners are encouraged to support each other during synchronous group activities and asynchronous online discussions. By applying metaliteracy, they share research discoveries, communicate technical know-how about their technology platforms, and make collaborative decisions about the culminating project and presentation.

Discussion

The main findings from conducting our learning scenario are divided into three subsections: feasibility, engagement, and learning outcomes, and include participants’

experiences as articulated in their reflective essays. This analysis aims to determine whether the learning scenario as designed is worthwhile to inform future sessions.

Feasibility

The IPILM project team concludes that the learning scenario is feasible in terms of a) the execution and b) the sustainability of the course. Although the experiences from IPILM in winter term 2021/2022 encourage further course development, several challenges must be considered. First, it requires coordination on the part of the instructors. Organizational issues such as term schedules and time zones can be a hindrance and must be coordinated in advance. Also, coordination in terms of course content and learning tasks is necessary. Second, the IPILM course requires marketing to recruit additional interested students to participate in the learning scenario. During winter term 2021/2022, most students were from India, which led to an imbalance in equal representation of cultural diversity. Third, trust between the involved instructors is crucial to plan and execute such an endeavor. This collaboration grew from a long-standing partnership between the German and Indian instructors. Regular instructor meetings and the Moodle space for instructor collaboration ensured exchange and trust-building before, during, and after the learning scenario. Fourth, suitable technical infrastructure is necessary to conduct the course. A learning environment independent of the participating universities is desirable but is not always possible due to limited financing. Furthermore, European universities need to use a learning environment that complies with EU-GDPR regulations.

Engagement

The project team found that learner engagement in this iteration of IPILM was effectively sustained throughout the course. Of the 35 registered students, 34 participated in the course, and 31 students completed the course. Students actively participated in collaborative learning activities, including synchronous class sessions with all the instructors and students and small group meetings with their teammates. The overall feedback from the students, as articulated in written reflective essays, was positive. In general, the dropout rate was low. However, an aspect that needs further consideration is the recruiting of students. The Indian instructors were likelier to find interested students than the other instructors. The reasons for this imbalance in recruiting students from all the participating institutions and possible approaches to solve this disparity should be further discussed.

The students' reports indicate a very positive and enriching experience. As one student put it: "We students collaborated well and helped each other out if someone could not make it - this is usually not the case in other courses." Even though the different time zones and schedules led to organizational challenges, the group process worked well for most students. The groups could determine means of communication (e.g., via WhatsApp or Google Meet) and time in their schedules to communicate successfully and finish assigned tasks. Also, the conference and the possibility of presenting their work to a broader audience were rated as motivational factors. The most significant sources of frustration were unequal motivation, involvement, and participation in some groups. This aspect is closely related to the difficulty in finding interested students. Some students also wished for more instructor guidance during group work. This could be implemented by, for example, assigning an instructor to every group to monitor the group work regularly. The high engagement of the students in the course encourages the further development of the learning scenario, including ongoing adjustments to facilitate group work.

Learning Outcomes

In the final class, the students had the opportunity to provide verbal feedback. Their comments show several learning outcomes on an individual and personal level, including but not limited to the improvement of soft skills and benefits to enhance their perspectives (also regarding information literacy) by working in a team with diverse cultural backgrounds. Even though many students already had experience in intercultural settings, such as a semester abroad, the intensive work with peers from different countries online helped them deepen and practice intercultural collaboration. As one student put it: "I thought I knew about Information Literacy before, but finally learned a lot about Information Literacy. I gained presentation and collaboration skills. I was meeting cool people from all over the world. I am looking forward to more such courses."

Based on the observation of the instructors, the information literacy and metaliteracy elements meshed well together, partly due to their different emphases. The open pedagogy components, based on the idea of learner as producer, helped to motivate students to delve into the metaliterate learner roles and to consider the four learning domains. In addition, metaliteracy played a role in scaffolding learners as they encountered the open pedagogy approach that was applied in the course. The students presented their work and acted as experts on their learning topics by producing and sharing knowledge. These sessions helped them to draw on their interdisciplinary backgrounds and unique intercultural perspectives

to engage in productive discourse. Moving forward, the instructor community will consider how the intersections among intercultural perspectives, information literacy, metaliteracy, and open pedagogy might be fine-tuned.

Conclusion

IPILM builds a virtual learning community that brings together students and instructors from across the globe to participate in theme-based discourses pertaining to topics of contemporary relevance.

This collaborative space is structured yet flexible allowing for open pedagogy and knowledge creation through intercultural student and instructor teams. Many rounds of feedback from the instructors and among peers during collaborative activities further fortified the learning process. The virtual conference at the end of the course enabled the students to present their work to an external audience as information-literate and metaliterate learners. It allowed them to reflect upon the ideas through an intercultural lens.

This transnational course provides new perspectives not just for students but also for instructors. It brought to the fore the process of devising and planning the course collaboratively. The project team worked together on making common access to the technical infrastructure available, coordinating semester schedules and student availability, promoting the course, supporting students via notifications, providing reminders and assistance in their scientific research, moderating sessions, and offering feedback. IPILM demonstrates that finding common ground despite differences in culture, time zones, pedagogical backgrounds, and work styles can result in engaging conversations and observations for building extensive academic content for deliberation.

In the future, we, the IPILM project team, wish to build on this experience and expand the community, bringing even more diverse perspectives into this global discourse. But then we must consider the maximum number of students to be taught in such an endeavor. We also cannot ignore the challenges of synchronous teaching and learning across the globe, such as time zone differences, platform preferences, and different data protection policies and practices. Finally, we observed the value of collaborative teaching and learning among international participants to gain transnational perspectives on our ever-changing information environment.

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