

Peer-reviewed article

Interaction in Craft Education

Collaborative Dynamics Between International and Domestic Students

Pia Brännkärr

University teacher, Doctoral researcher (MA), Åbo Akademi University, Finland

<https://orcid.org/0000-0003-3669-1627>

pia.brannkarr@abo.fi

Mia Porko-Hudd

Professor (PhD), Åbo Akademi University, Finland

<https://orcid.org/0000-0001-8608-0619>

mia.porko-hudd@abo.fi

Juha Hartvik

University Lecturer (PhD), Åbo Akademi University, Finland

<https://orcid.org/0000-0002-3493-4413>

juha.hartvik@abo.fi

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Abstract

This study explores how international and domestic students interact in a university craft course. Earlier research has shown that interaction between international and domestic students is often limited, while studies in craft education highlight craft as a communicative subject. The present study connected these fields by examining (1) how international students interact with domestic students and (2) what observable factors influence or trigger their interaction. The analysis was based on observations of video recordings from a craft course. The findings indicate that students engage with each other on their craft projects, tools, techniques, materials, personal aspects and language and cultural topics. A key factor initiating interaction is the presence of a physical craft project, which provides a shared focus that encourages communication.

Introduction

Internationalisation is an important part of higher education, and one expectation of international students is the chance to communicate with their domestic counterparts (Gresham & Clayton, 2011; Hietaluoma, 2001). However, research has shown that even when such students attend the same courses, their interactions vary in extent, from minimal to non-existent (Osmond & Roed, 2010; Peacock & Harrison, 2009). The engagement can be affected by several aspects such as language, group size and seating arrangement, (Dunne, 2009; Peacock & Harrison, 2009; Vinther & Slethaug, 2015), suggesting that expectations of contact may be unfulfilled and that domestic students have fewer opportunities for internationalisation at their home universities.

Research has indicated that in the Finnish context, international students enrolled at universities choose to attend craft courses (see, e.g., Brännkärr & Porko-Hudd, 2023; Kiviniemi, 2021). During educational craft various kinds of interaction and communication, both verbal and nonverbal, occur between students, between students and teachers and between students and materials/tools (see, e.g., Andersson et al., 2016; Oja et al., 2014). Furthermore, because craft is a social subject, students move around in the craft studio during a craft lesson (Gyllerfelt, 2023a, 2023b). This study addressed the problem of limited interaction between international and domestic students by combining the two fields of international students' interaction and craft. Focus was directed to what occurs in relation to interaction when international and domestic students participate in a subject such as craft, often characterised as a socially oriented discipline.

Previous research (see, e.g., Dunne, 2009; Peacock & Harrison, 2009) on domestic and international students' interactions has been based mainly on these learners' perspectives about and experiences of engagement. Such experiences during a craft course have been reported by Brännkärr et al. (2025). Research has also shown that students' perceptions regarding their use of time and interaction in educational craft may differ from what can be observed (Andersson et al., 2016). Therefore, observing these interactions in practice, in addition to examining self-reports, is of interest. Observation has been shown as a suitable approach for scrutinising interaction during craft lessons (e.g. Gyllerfelt, 2023b; Johansson, 2002, 2011). Accordingly, the present study deviated from convention by adopting an outsider's standpoint in exploring directly perceivable engagement among students in a multicultural university-level craft course in Finland.

The context chosen for this study is distinct because students can move around in a craft studio during craft lessons, unlike in lecture settings where students typically remain seated throughout a class. In craft education, students collect tools or materials or use machines allocated in specific areas, among other mobile tasks. Although interaction in craft education has been examined in previous research (e.g., Andersson & Johansson, 2017; Ekström, et al., 2009; Gyllerfelt, 2023b; Johansson, 2002), the present study is situated in a context where international and domestic students participate together in the same course. Moreover, for many international students, our setting may represent their first encounter with craft as an academic subject. Finally, this study was conducted in a non-native English context, which means that both domestic and international students and teachers communicate in English as a second or third language, whereas prior work on international students' interactions have been carried out in contexts where English is the native language of instruction (see, e.g., Dunne, 2009; Osmond & Roed, 2010; Peacock & Harrison, 2009).

In consideration of the abovementioned issues, this study sought to derive an in-depth insight into interactions between international and domestic students in a multicultural craft course offered by a Finnish university. To this end, video documentation of the class was examined. Additionally, we explored craft as a potential arena for engagement by investigating the observable factors that affect or trigger such interaction. The study was guided by the following research questions:

- What types of interaction and communication can be observed between international and domestic students during craft lessons?
- In what ways do contextual factors within a craft setting affect interactions between these students?

In this work a *multicultural craft course* refers to a class attended by both international and domestic students, and *international students* include exchange students studying for a short period in another country and international degree students studying abroad to obtain a degree.

Literature review

Interaction and learning in craft education

Interaction is instrumental in craft lessons (Andersson & Johansson, 2017; Koskinen et al., 2015; Porko-Hudd & Hartvik, 2023). Learning craft requires illustration, observation and demonstration (Koskinen et al., 2015), and communication occurs not only during pupils' work phase, but also during the planning stage (Oja et al., 2014). A model established by Porko-Hudd and Hartvik (2021, 2023) shows that teachers, students and purposefully designed learning environments are identified as contributing agents in educational craft.

Rich communication occurs among students and between teachers and students during craft lessons (Andersson et al., 2016), as is observed in tutoring sessions wherein teachers and students interact, and students assist each other while they work (Oja et al., 2014).

Communication may also take place between a student and the craft environment as audible self-directed dialogue (Oja et al. 2014), or ideas may be conveyed through sketches (Johansson, 2002; Oja et al., 2014). Additionally, both teachers and students use body language, such as gestures, when they engage with each other (Koskinen et al., 2015). As asserted by Andersson et al. (2018), hands are an important recourse in communication. Interaction during craft lessons can therefore be verbal, nonverbal or visual – an observation supported by Andersson and Johansson (2017, p. 108):

[...] practical knowledge is not only communicated verbally but also requires support from several multimodal forms of interactions. Body language and actions have an important role in how shared understanding is created for how for example the suitable handling of a woodturning tool should be implemented.

As can be seen, students' learning can be enhanced through both verbal and nonverbal communication (Oja et al., 2014), but Andersson et al. (2016) further specified such communication into seven forms in the context of a wood turning workshop: (with our translations from Swedish to English) (1) regular three-dimensional group instruction [*regelbunden tredimensionell gruppinstruktion*], (2) verbal [*verbal*], (3) verbal with the help of tools [*verbal med hjälp av verktyg*], (4) verbal aided by body language [*verbal med hjälp av kroppsspråk*], (5) tools only [*enbart verktyg*], (6) solely body language [*enbart kroppstecken*]

and (7) body against body [*kropp mot kropp*]. These forms may be used in various constellations. For example, forms 2 to 6 can occur as teachers instruct students, while forms 2 to 7 may take place during one-to-one interactions between teacher and student or between students (Andersson et al., 2016). However, Andersson et al. (2016) stressed that body-against-body communication is used primarily by teachers and that they identified only one student who communicated in this manner. In a later study, an eighth form of communication was identified—deliberate silence (Andersson et al., 2018).

Andersson et al. (2018) also pinpointed four communicative resources in craft (translated here into English), namely tangible [*konkret*], fictive [*fiktiv*], bodily [*kroppslig*] and verbal [*verbal*] resources. A tangible resource revolves around giving information three dimensionally through demonstrations and physical objects, such as tools (Andersson et al., 2018). A fictive resource centres on providing information without concrete demonstrations, with or without verbal input. Sketches, photos and videos can be used for visualisation. A bodily resource involves information transfer through three-dimensional demonstrations or body-against-body communication. A verbal resource concerns conveying information through language and may complement tangible, fictive and bodily resources (Andersson et al., 2018).

Interactions that entail multimodal resources were also observed in Gyllerfelt and Johansson's (2021) research on newly arrived pupils' participation in craft lessons. Such engagement includes both verbal communication and body language, including gestures, gazes and facial expressions, as well as materials, tools and equipment, which collectively support interaction (Gyllerfelt & Johansson, 2021). Multimodal resources can be used by students and teachers who speak different languages to reach understanding (Gyllerfelt, 2025). In our study, students might not share the same language, placing them in situations similar to those described in Gyllerfelt's studies.

The descriptions above show that learning in craft education takes place 'in a social and cultural context, it can be said to be socially and culturally situated' (Andersson & Johansson, 2017, p. 105). Students receive help from both teachers and peers, and learning occurs not only through work on individual projects (Andersson & Johansson, 2017), but also in collaborative endeavours, during which students cooperate and solve problems through social interaction (Johansson, 2002). Furthermore, pupils' movements during class may relate to their own ongoing work but may also have a social character. Pupils may have a desire to interact with one another, and such encounters can lead to engagement in each other's projects (Gyllerfelt, 2023a, 2023b). Interaction may also take the form of observing others' work (Johansson, 2002). How a classroom is furnished can influence pupils' interaction and communication (Gyllerfelt, 2023a).

Gyllerfelt and Johansson (2021) and Gyllerfelt (2025) focused on newly arrived pupils attending craft lessons in Sweden, who may be exposed to a new subject, a new language and an unfamiliar educational context. Comparable experiences may be encountered by some of the international students in the present study. Gyllerfelt and Johansson (2021) asserted that craft activities enable students and newly arrived pupils to meet and learn in various ways, as natural movement in craft workshops creates opportunities for interaction. Even though pupils might not share a first language, they can engage through a craft project, which functions as a mediating resource (Gyllerfelt, 2023a), as do other items such as, materials and tools (Johansson, 2002). This understanding aligns with the sociocultural perspective on learning, in which mediating resources are a central component (Säljö, 2014).

Learning in craft can be said to take place in the ‘outer and inner learning spaces’ [our translations of *det yttre lärandet* and *det inre lärandet* to English, respectively] (Andersson et al., 2016; Illum, 2021). The outer learning space involves situations in which a person (student) with less subject knowledge receives information, demonstration or guidance from someone with greater expertise (Illum, 2021). After receiving guidance students begin or continue working on their own project, which is when they move on to the inner learning space (Andersson et al., 2016; Illum, 2021). The inner learning space is where students process received information and transform it into work and learning (Andersson et al., 2016).

Students shift between the outer and inner learning spaces during a craft lesson or project. When encountering problems in the latter, they switch to the former to seek support or guidance from peers or others with advanced knowledge. As noted in relation to tutoring situations, students do not necessarily consult a teacher for help, but turn to their fellow students (Andersson et al., 2016).

Interaction between international and domestic students

The extent of interactions between international and domestic students varies (Osmond & Roed, 2010; Peacock & Harrison, 2009) and is influenced by several factors and barriers. One such barrier is a high concentration of international students from the same country (Dunne 2009). Seating arrangements in international classrooms may also affect opportunities for interaction. Research has indicated that these students tend to occupy different areas of a classroom, thus reducing spontaneous interactions (Dunne, 2009; Harrison & Peacock, 2010) or contact during group work, as groups are often formed based on seating arrangements (Dunne, 2009).

Challenge also comes from international students’ English proficiency (Dunne, 2009; Osmond & Roed, 2010; Peacock & Harrison 2009). Additional language barriers may arise in

non-native English contexts (Vinther & Slethaug, 2015). Vinther and Slethaug (2015) described how informal discussion between lecturers and domestic students can be in the native language and that domestic students preferred to communicate with each other in that language. This may cause international students to feel excluded or insecure when they are unsure about whether they have missed important information (Vinther & Slethaug, 2015). In Finland, international students have also experienced language barriers, insufficient teaching quality in English and barriers between domestic and international students (Calikoglu, 2018).

International students in a craft course where English is not the primary language of instruction have a positive experience and feel included when English is used in teaching and guidance (Brännkärr et al., 2025). Väänänen et al. (2025) reported on students' experiences regarding language barriers, especially those involving craft-related terminology, in settings wherein everyone is a non-native English speaker. When problems with English occur, students could use their native language and obtain help from peers who share the same language.

Dunne (2009) stated that domestic students bring forward that a small number of students and relatively small classrooms improve the chances of interacting with international students. In the same research, domestic students also noted that classes involving laboratory-based group work—with groups assigned by a teacher—enhance the prospect of interaction. Group work offers the greatest opportunities for interaction (Peacock & Harrison, 2009), but when international students choose their own teams, they tend to work with peers from the same ethnic background (Osmond & Roed, 2010). Harrison and Peacock (2010) added that domestic students find group work to be the only encounter that they have with international students, with much of such engagement ending upon the conclusion of formal activities. Only in rare cases does such contact evolve into social relationships beyond the classroom. Furthermore, some domestic students blame the universities for offering limited interactions with international students, partly because lectures and seminars feature minimal opportunities for easy engagement (Peacock & Harrison, 2009). How groups are managed is therefore central, and interaction should be gently encouraged (Harrison & Peacock, 2010).

In a similar vein, Brännkärr et al. (2025) reported that most interactions concern course-related matters, such as craft projects and situations where assistance is involved. Students have also described how engagement that begins with a discussion of craft projects can evolve to having lunch together after class. Interaction could also concern everyday issues and cultural aspects, although to a lesser extent than assistance- and course-related situations. Ultimately, even though both international and domestic students recount

experiences of interaction with each other, most students hailing from abroad frequently engage with other international learners, while domestic students have substantial contact typically with other domestic learners (Brännkärr et al., 2025).

Methodology

This study adopted a sociocultural perspective in which learning and development are seen to occur in a social context through interaction with others (Säljö, 2014). Video documentation was used to investigate observable interaction and communication between domestic and international students during lessons in a multicultural craft course. Observation is a suitable approach when focusing on interaction (Hirsjärvi et al., 2000). Video recordings enable the study of interaction in natural settings (Knoblauch & Tuma, 2011). Natural settings were defined by Knoblauch et al. (2014, p. 437) as “‘naturally occurring’ social situations, whose existence does not depend on a purposeful research design’. This definition applies to the present study, as data were collected in authentic craft studios that were not altered to fit the aims of this work. The course and the students’ interactions would have taken place regardless of the data collection.

Video documentation has been used in research on interaction and communication in craft education (see, e.g., Andersson & Johansson, 2017; Gyllerfelt, 2023b; Johansson, 2002, 2011). It allows researchers to review the same situation repeatedly, enabling the identification of new aspects and more comprehensive analyses (Cohen et al., 2011; Johansson, 2002). Video recordings are also more detailed than ‘plain observation’ and can be watched in slow motion (Knoblauch, 2006, p. 73). Although this method lacks the same selectivity of other approaches, it is nonetheless selective in terms of what is filmed at a certain moment (Flick, 2014). Finally, video documentation allows the capture of nonverbal communication, which, as previously noted, occurs in interaction during craft lessons (Cohen et al., 2011; Johansson, 2002).

Contextual information and data collection

The data used were videos from the course Craft in Natural Materials (5 ECTS), recorded during the autumn semester of 2021. The course is offered at Åbo Akademi University, a Swedish-medium university in Finland, and involves work with various craft techniques and materials, written assignments, article reading and discussion. The main language of instruction is Swedish, but international students receive guidance and information in English. Instructions for assignments are given orally and in writing, as well as in Swedish and English. For additional description of the course, see Brännkärr et al. (2025).

We selected this course because it typically attracts the highest number of international students and is the first craft class offered in the autumn semester. Furthermore, the main author brings field-specific insights gained from teaching the same or a similar course over several years prior to the data collection. Previous experiences of comparable courses provide contextual sensitivity that supports the recognition of relevant actions and interactions in material. The craft courses delivered to international students at Åbo Akademi University commonly include relatively numerous scheduled lessons, which may provide more favourable conditions for student interaction than those encountered in classes with fewer sessions.

Every lesson began with information and, in most cases, with instructions and demonstrations led by the two teachers administering over the class. Certain lessons also encompassed short student presentations delivered in a mix of Swedish and English. Sometimes, the teachers divided the class into two subgroups to instruct them on different craft-related content. These teacher-led parts of the course were never recorded. Following these introductory segments students started working on the tasks in focus for given lesson and could freely communicate with each other. The students had no designated workspaces in the craft studios, instead having the discretion to choose where to sit or work depending on the task and lesson structure.

The enrollees consisted of domestic ($N = 12$) and international ($N = 13$) students, all of whom were informed during the first lesson about the research and participation being unrelated to course completion or assessment. They were asked to fill in consent forms to indicate their willingness to participate and be video-recorded during classes. Of the 25 students, 24 consented and we refrained from filming the lone domestic student who did not give their informed consent.

The students were also asked to complete questionnaires about the motivation for their choice of course, expectations from the class and experienced interactions, these data have been reported in previous studies (Brännkärr & Porko-Hudd, 2023; Brännkärr et al., 2025). The international learners were exchange students from six European countries. Although they are referred to in this work as one group, it is a heterogeneous group comprising individuals from diverse backgrounds with varying prior experiences. Some may have enrolled in classes similar to craft education in their home countries, while others may have been completely unfamiliar with this discipline and the techniques covered in the course. The domestic students have received compulsory craft education during primary school (grades 1–7).

Table 1
Overview of data material.

Filmed lessons (1–12)	Lesson content	Location	Number of video clips	Length of video clips
4	Outdoor day in the forest, along a hiking trail Carving, willow wreath and discussions about outdoor education	Outdoor, forest	2	00:25:22 00:24:04
5	Felting (half of the group, filmed) Cutting tools in wood (half of the group, not filmed)	Textile studio 1 Felting studio	4	00:20:36 00:15:46 00:19:52 00:14:40
7	Presentation of previously completed tasks Wood carving; students working individually or in smaller groups for this task	Wood working studio	2	00:23:19 00:26:08
9	Continue with the same task as in lesson number 7 Some also working on other tasks	Wood working studio Painting studio	4	00:24:36 00:23:34 00:25:23 00:23:43
10	Working with own projects to deepen knowledge of various techniques	Textile studio 2 Felting studio Metal work studio Wood working studio	4	00:05:49 00:31:15 00:23:20 00:28:00
11	Students working on various tasks depending on what they had left to do All practical tasks to be completed before the next lesson	Wood working studio Painting studio Textile studio 1 Textile studio 2	5	00:27:17 00:19:26 00:21:41 00:09:27 00:12:49
		Total	21	07:26:07

The material consisted of 21 video clips from six of the course's 12 lessons. The course lasted for seven weeks, and recording was spread over lessons during the entire course.

Throughout the recording process, continuous decisions were made regarding when, where and what to document, reflecting what Flick (2014) stated about selectivity in connection with observation through video documentation. The first selection concerned which lessons to record on video, and the chosen ones centred on students' work with various craft

techniques and materials, different course tasks and activities performed in multiple craft studios. The second selection revolved around recording locations for each lesson. When the main author, who was also one of the course teachers, observed where students began to work, two cameras on tripods were positioned in the craft studios. Camera placement was intended to capture interactions between students, with particular attention paid to engagement by the international students. Correspondingly, the cameras were positioned so that, at least in the beginning, they recorded more than one student, with at least one of the learners being an international student. Table 1 provides an overview of the recorded lessons, lesson content and recording locations.

Due to the characteristics of craft education, the students moved around while working, accordingly entering and leaving the camera frame periodically. At times, all the students left the frame, and in other instances, a student left while another entered a recorded workspace. On occasion, a student or a teacher temporarily blocked the camera view—a known limitation of using fixed cameras noted by Cohen et al. (2011).

Given the main author's dual role as researcher and teacher, the cameras were left recording during the lessons, but when there was time, the researcher/teacher checked the devices and occasionally repositioned them. An example is when the students had moved away from the location to where recording was being directed. Only parts of the lessons were documented, and the 21 video clips range in length from approximately 9 to 31 minutes (Table 1). One clip is only 5 minutes long, as the recording was stopped and the camera relocated when no student remained at the original location. The total duration of the recordings is 7 hours, 26 minutes and 7 seconds. After each recorded lesson, the researcher noted down the lesson content as well as the placement and timing of the cameras.

The video recordings show a few occasions in which the students or the teacher appeared to become aware of the camera and of being observed. This awareness was visible only briefly, after which they continued with their activities as before. Therefore, the presence of the cameras was assumed to have minimally affected the students' interactions over the duration of the course.

Video analysis

The video analysis was conducted by looking into the data material as a whole and examining selected interactions. During the initial review of the data, the interactions were divided into four types: (1) international students with other international students, (2) international students with domestic students, (3) international students with teachers and (4) international students with materials and tools. Further analysis and the presentation of

results focused on interaction between the international and domestic students, whereas other types of engagement were excluded.

The interactions observed between the international and domestic students ranged from a short sentence to longer discussions. Three of the 21 video clips were excluded from additional explorations because none of the interactions of interest (i.e. international–domestic students) are visible on them. Two of these clips were recorded on an outdoor day at the beginning of the course, which does not necessarily indicate an absence of interaction but that engagement took place beyond the camera frame. During the outdoor session, the students spread out while carving — a segment that was filmed — but interaction may have also occurred in other times of the day. The third excluded clip was recorded in the painting studio, which is a small room, with only the international students and one teacher appearing in it during the recording.

The entire data and the interactions between the international and domestic students were repeatedly examined through reflexive thematic analysis (Braun & Clarke, 2022) to identify the topics involved in the exchanges and the factors affecting the initiation of interaction. The interactions of interest were pinpointed based on the literature review and the main researcher's experience of teaching craft. Various codes describing the topics related to the observed interactions were inductively created using NVivo, after which the codes were clustered to establish the themes reflecting interaction topics and influencing factors. The themes served as basis for the selection of short sequences for microanalyses intended to gain a deeper understanding of the interactions.

Data collection challenges

The video recording was conducted in an environment where it was sometimes challenging to hear what was said due to surrounding voices and sounds. The recordings were also made using two video cameras without external microphones. Nevertheless, the primary focus was not capturing exchanges verbatim but who interacted with whom and what the engagement was about. In certain situations, the students' conversations were clearly audible, so the microanalyses was therefore partly directed to what was said during these exchanges.

The classes were recorded during the autumn of 2021, during which the Covid-19 pandemic was ongoing. It was mandatory for both teachers and students to use face masks during classes, which sometimes challenged efforts to read facial expressions or made it difficult or impossible to identify precisely who was speaking during verbal interactions, especially when students spoke quietly or there was considerable surrounding noise. Consequently, for one of the extracts presented in the Results section, we could not attribute some of the

transcribed lines with certainty to either of the two international students involved. Occasionally, as well, it was unclear whether an interaction was initiated by an international or a domestic student.

The main author's dual role as both teacher and researcher was carefully considered throughout the research and as the course was taught. To ensure data collection in a natural setting, the course structure was planned by the two teachers, with previous teaching experiences as a foundation rather than research considerations. The main author's familiarity with the students may have influenced the data analysis to some extent, but an interval of years passed between the data collection and analysis, creating a distance from the teaching context and the students involved. The use of video documentation also enabled the main author to adopt an observer role during the analysis, thereby enabling them to approach a familiar phenomenon with analytical detachment. In addition, familiarity with the course structure and assignments allowed us to position the filmed episodes within a wider course context.

Results

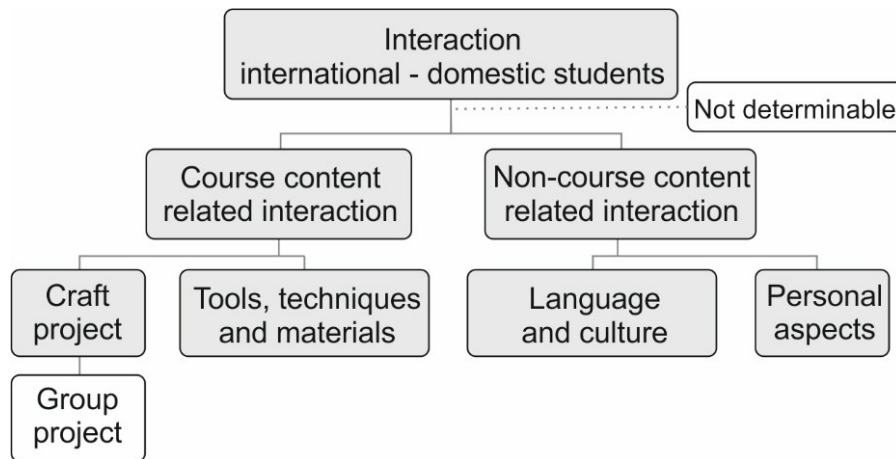
The discussion of the results is organised into four subsections and structured around overarching themes. The first two subsections address the first research question, the third deals with the second research question and the final subsection focuses on the issue of language use. Examples and microanalyses of the interactions are reproduced here to deepen the understanding of the observed exchanges. Although language use was not a primary focus of the study, this aspect was briefly addressed given its relevance in both craft education research and studies of international students' interactions and challenges in connection to that.

The topics on which the international and domestic students interacted were divided into *course content related aspects* and *non-course content related aspects* (Figure 1). Apart from these overarching themes, some interactions could not be coded, because we could not hear/determine their content. The overarching theme *course content related interactions* is the one that occur the most and encompassed *craft project* (theme), along with *group project* (subtheme), and *tools, techniques and materials* (theme). The overarching theme *non-course content related interactions* covered the themes *personal aspects* and *language and culture*.

The factors affecting the initiation of interaction were classified into three themes, namely *physical craft project*, *the need for help/advice* and *interest in what others do/say*.

Figure 1

Topics of interaction.



In the extracts presented in Table 2 to 4, the acronyms IS and DS refer to international and domestic students, respectively. The examples and extracts are designed to show the qualitative variety of the interactions and not their absolute quantitative properties.

Course content related interactions

The theme *craft project* covered interactions wherein the students asked about others' work, showed their own work or discussed project planning and sought their peers' opinions. These exchanges most often took place with the ongoing craft product physically present and with the conversations sometimes supported by sketches.

A central subtheme within this theme is *group project*, with the students allowed to complete one course assignment as a collaborative endeavour. The students opting for group work were divided by the teachers into four teams, each consisting of both international (1–3) and domestic (1) students. Group members often worked together at the same table/craft bench and engaged in discussions about their project while sometimes also involving students from outside the group. These discussions concerned project planning, material choices and decisions about smaller details of the work.

Some of the group members adopted active roles, whereas others were more passive, although all followed ongoing work and discussions. Observing what others do is one aspect of interaction. During these situations, the students focused intensively on parts of the project for which they were responsible across extended periods, after which they resumed interaction. Nevertheless, work practices varied between groups, and group members did not always work at the same bench or engage in frequent discussions. A case in point is a

group comprising two members, which exhibited a working style different from that evident in a team with four members.

Group projects can motivate the exchange of personal contact information, enabling collaboration outside the classroom. This sharing was evident in the recordings of the second to the last lessons, during discussions of project presentation. For instance, an international student asked their domestic counterpart about whether they can send photos through WhatsApp so that the two international students could compile a presentation. The question indicates that contact information had been shared earlier in the course.

Table 2

Commenting on group project, 00:00:55–00:01:28, lesson number 11 of 12.

Who	Nonverbal actions	Verbal communication
IS1	IS1 and DS1 make some finishing touches to their group project placed on a table	Okay.
DS1	Both DS1 and IS1 take a step away from their project	Perfect.
DS2	Is out of the camera frame	Looking good.
DS1		Thanks!
DS2		Mhm...
DS1	Points at a felted ball. DS2 enters the frame and takes a few steps to get closer to the project.	This fell off.
IS1	Takes the ball and shows where it should be	Yeah, here.
DS1		We have to use maybe <i>tvåkomponents lim</i> , two components glue.
IS1	Points at the product	We do [something inaudible].
DS2	Bends down to come closer to the product and points at a detail on the product. DS1 picks up their phone and starts focusing on it.	You have glued these?
IS1	Nodding	Yeah.
DS2	Hand gesture to symbolise drilling	Or did you drill before?
IS1	Looking down at the project and nodding	Ee, yeah.
DS2	Looks at the project, turns away leaves the frame.	Mmhm.

Students from different groups interacted about group projects, as shown in the extract in Table 2. Two students (IS1 and DS1) were in textile studio 2 putting the finishing touches on

their group project. Earlier in the recording, their fellow group member (IS2) was present but not during the situation reflected in the extract in Table 2. A student (DS2) who was not in their group commented on their project, which led to an interaction between the three students.

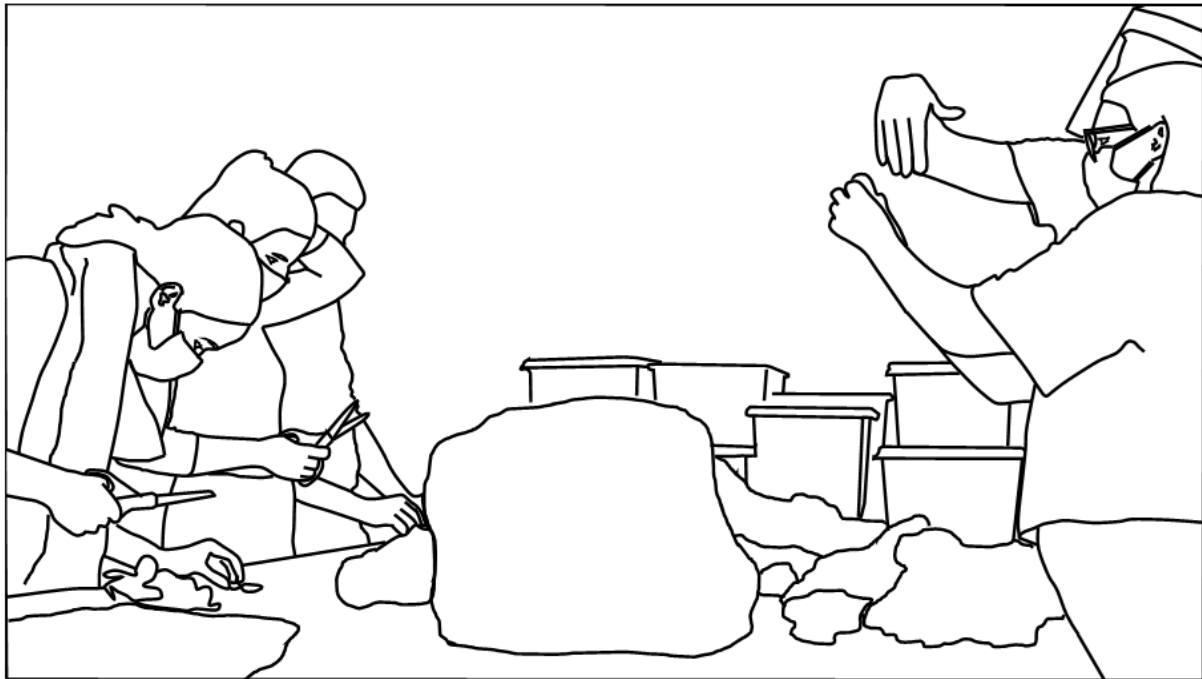
The extract in Table 2 shows that the interaction initially occurred between the two students finishing their group project. A third showed interest in what they have done, moved close, and entered the camera frame. DS1 and IS1 described what has happened and what needs to be done to fix it. DS2 expressed curiosity over specific product details, which prompted a brief response from IS1. Midway through the exchange, DS1 shifted focus to their phone and withdrew from the interaction. The domestic students communicated in English even when speaking with each other. On one occasion, DS1 switched to Swedish mid-sentence, likely due to uncertainty about the English term for a specific glue. They translated the Swedish term word-by-word into English. The entire interaction concerned the physical craft project in front of the students, with the exchange typified by verbal expressions in combination with body language, primarily through pointing at the project's details.

The theme *tools, techniques and materials* was featured in, for example, an overall discussion about a technique or exchanges about a specific tool or material used in the moment. A specific case involves a domestic student showing interest in what tool an international student used in their project. Another instance is when an international student turned to a domestic student for advice when struggling to see in which directions fibres run on wool they were preparing for felting (Figure 2 and Table 3).

The following situation occurred during the fifth lesson, during which five students stood around a table in one of the textile studios and prepared wool for felting. Three international students were at the left side of the table, one international student (IS) was positioned close to the camera and one domestic (DS) student stood at the right side of the table (Figure 2). The international student at the right side of the table was separating wool layers and needed to find out the direction of the wool fibres. Before they started on the task, they received instructions from the teacher. They inspected the wool that they were holding before turning to the domestic student beside them and to ask for advice.

Figure 2

Visualisation of the situation involving helping.



As seen in Table 3, the domestic student turned towards the international student seeking advice. Together, they looked at the wool fibres, then the domestic student pointed with their hands to explain how to determine the fibre direction. As the international student continued to inspect the wool, the domestic student indicated what they believe is the fibre direction. This situation illustrates how interaction between international and domestic students can be initiated simply by working beside each other. The interaction was initiated by the international student and both learners used verbal communication and body language during the exchange. The domestic student adopted body language to demonstrate how the wool can be pulled to determine fibre direction. They issued fictive instructions verbally and gesturally but never physically handled the wool, which was held only by the international student (Figure 2). The exchange focused solely on the material and did not extend to other topics. The three students on the other side of the table remained uninvolved in this interaction.

The situation above is an example of joint problem-solving between the students, which was also observed in other interactions during the course. It illustrates that a student who aids is not necessarily sure about correct answers but helps, nonetheless.

Table 3

Asking for help, 00:11:43-00:12:17, lesson number 5 of 12.

Who	Nonverbal actions	Verbal communication
IS	Turns and take a step towards DS and points on the wool they (IS) are holding	Is it this or that way?
DS	Turns towards IS and looks and points at the wool IS is holding	It's hard to see but you can check [something inaudible].
DS	Points at the wool and turns after that away from IS.	[something inaudible] Yes, it is that way.
DS		I'm not 100 percent sure.
IS	Continues looking at the wool	
DS	Turns towards IS	You have to guess a little.
IS	Continues looking at the wool, DS turns away from IS.	Aaah, aah and then [something inaudible]
DS	Turns again towards IS	You see one way it goes easier to separate
IS		I think it's...
DS	Comes closer to IS and shows and points on the wool, move hands as if pulling the fibres in different directions; IS is at the same time pulling the fibres	I think the fibres goes this way because it is easier to separate.
DS and IS	Both looking at the wool that IS is holding up in the air	
IS	Pulls, with their fingers, the wool fibres in different directions trying to see in which directions the fibres go	
DS and IS	Both return to their own work, IS puts down the wool that they have been holding up	

Non-course content related interactions

As mentioned earlier, the overarching theme non-course content related interactions consists of the two themes *personal aspects* and *language and culture*.

Personal aspects included exchanges of a personal nature, such as discussions about family members, friends and travels. One such interaction occurred during the ninth lesson, when four students gathered around a craft bench as they worked on their group project. While intermittently discussing the project, one international student asked a domestic student

about a young family member's birthday party, which stimulated a conversation about the birthday celebration. The question indicates that the domestic student had previously mentioned something about an upcoming birthday party because the international student seemed to be aware that such an event had taken place. This also reflects that the interaction concerning personal aspects is not an isolated instance.

Language and culture was featured in interactions related to matters concerning the students' home countries, including their cultural backgrounds, languages and traditions. For instance, two international students talked about something in their own language, and a domestic student overheard them. The latter asked them which language it is, after which the response prompted the student to enquire about how to say 'My name is . . .' in the language. The domestic student repeated what the international student uttered. This interaction can be attributed to the domestic student overhearing the discussion and expressing interest in learning about the international students' native language. These kinds of interaction arise when students can talk with one another while working on course assignments.

The cultural aspect of interaction was also evident in a discussion about craft practices in an international student's country of origin. Among a mixed group of students working around a table in the felting studio, an international student commented on finding felting satisfying and wondering why they have never engaged in this practice in their home country. Although the remark was not directed at a specific individual, another international student and a domestic student responded by sharing their perspectives. This engagement stems from a spontaneous utterance by the encounter with wool and felting as a craft technique.

Apart from these two themes, a random interaction could not be coded under any of the themes, or under course content related interactions. Exchanges cannot always be strictly coded under a single theme, as a given interaction might start as a topic related to course content before evolving into a discussion about more personal aspects. This is reflected in Table 4, featuring engagement occurring near the end of the course (10th lesson). Three students were working in the felting studio, one domestic student was dealing with an individual project and two international students were collaborating on a shared initiative. The domestic student prepared a felted technique sample by combining wool with dog hair. One of the international students expressed interest in the domestic student's project, asking whether they could touch the work.

Table 4

Working in the felting room, 00:21:39–00:23:17.5, lesson number 10 of 12.

Who	Nonverbal actions	Verbal communication
IS1	Walks towards DS's work with an outreached hand	Can I touch this wool?
DS	Preparing soap water for the felting	Yeah, yeah of course.
IS1	Touching the wool	Oooh, funny I didn't know you can use dog hair [something inaudible].
IS2		Yeah, me neither.
DS	DS stops preparation and starts using hand gestures when talking. DS and IS start talking over each other.	Yeah, I'll try cause when we cut her, or before we cut her, it always...
IS1 or 2	IS1 walks back to the side of the table where they were at the beginning of the extract.	Are you...? [something inaudible, but seems to be a question]
DS	All three students are standing and looking towards each other.	...get felted on her
DS	Answers what IS said/asked	Yeah, I cut her, because yeah, she doesn't lose hair, so I have to cut her a few times a year.
IS2		Aaah. Well, that's cool, that you are working with your dog's hair now.
DS	Starts pouring soap water into a bottle	Yeah, you can use it for something pro-productive or something yeah...oooh [short interruption when DS spills water]. Eeeh, yeah for something good other than just throw it away when you...
IS1 or 2		Yeah.
IS2		Then you can, like, show her, maybe; she recognises herself or himself.
DS	Laughing	
IS2		Is it a he or she?
DS		It's a she.
IS1 or 2		It's a she.
DS		Yeah
<i>00:22:40–00:22:45 Short break with silence, all three continue with their work</i>		
IS1		Now she looks quite different, right, with cutting her.
DS	Someone laughs	Yeah.

Who	Nonverbal actions	Verbal communication
DS	Laughs, wipes the table with a cloth but takes short breaks to make some hand gestures as if they were cutting with a pair of scissors	I like to cut her by the sci- with scissors, because eeh, then she gets a better look.
IS1		Yeah.
DS		If we cut with the... eh machine, you have to take really short, so...
IS1		Aha.
DS	Laughs and uses body language to symbolise the feeling of the dog looking bad	[continues]: ...she looks really bad
IS1		Yeah, yeah.
IS1 and 2		[Starts discussing in their own language]

The international student's behaviour and interest in the physical material initiated the conversation about felting with dog hair, which was coded to the theme *tools, techniques and materials* under course content related interaction. The second international student joined the conversation. The single question about whether the international student could touch the work evolved into a discussion about felting with dog hair, about the dog and how the cutting of the dog's hair happened and why this needed to be done.

This extract in table 4 shows how an ongoing craft project can initiate interaction between international and domestic students. The communication was not solely about the specific craft project but expanded to the domestic student's dog (family member, personal aspects). Furthermore, it illustrates how the international student was curious about the material itself and wanted to take it in through both visual and tactile means. The extract in table 4 is also an example of how interaction can happen both as a break in ongoing work and during the continuation of such endeavour.

Another example of how course content related interaction evolves into one involving non-course content is when three international and one domestic student were working in the painting studio on their wooden group project. During the recorded sequence, all four students were involved in the painting. After a while, one student took on the task of painting small details, while two others started cheering that student on, both with words and cheerleading moves involving their arms. At this point, one of the international students shared that they had participated in cheerleading during their previous exchange experience in the US. The other three started asking questions, after which a discussion ensued. The

questions centred on studies as well as personal aspects connected to the exchange experience, with the students joking and laughing with each other. This interaction occurred during the penultimate lesson. The joke exchanges indicate a level of contact developed over the duration of the course and the group project. Notably, however, the data could not definitively show how much of this contact emerged from the course itself or from contexts unrelated to the course. For some of the students, the course context may have been their only point of contact, whereas others may have interacted outside the class.

Interactions could also be strictly non-course content related, for example, when a domestic student turned to an international student working at a nearby craft bench and asked ‘How was your trip?’. Prior to this question, the students had been working on their own projects, and the subsequent interaction concerned the trip and related topics. The question indicates that prior interaction between the two students had occurred, making the domestic student aware that the international student was going, or had recently been, on a trip. Otherwise, the domestic student would not have been able to ask such a question.

Observable factors affecting the initiation of interaction

One overarching factor strongly influencing opportunities for interaction in craft education is the course environment, where students are encouraged to talk and interact while working on assignments. This enables students to show interest in one another’s work, cultural backgrounds and everyday lives, thereby fostering natural engagement between international and domestic students. As shown in the examples and Table 2 to 4, interaction often occurred spontaneously when students worked close to each other and a minor question or action led to discussions that were both related and unrelated to course content. Interaction also emerged when a student waited for help from the teacher. An example is a domestic student approaching, then standing by a craft bench, where three international students were working. The former was waiting for their turn to get help from the teacher, and interaction between the students developed.

The factors that affected the international and domestic students’ initiation of interaction with each other, as observed in the video material, were divided into three themes, namely *physical craft project*, the *need for help/advice* and *interest in what others do/say*, among which the most frequently initiating theme was the first. The students noticed physical artefacts, sketches or materials and reacted to them which commenced exchange.

The *need for help or advice* factored in when students independently working on their projects faced various kinds of problems. In such situations, they turned to nearby students for help rather than always asking or waiting for the teacher. An example is presented in Table 3. Another type of help-related situation was when a student was looking for a specific

tool or material and asked a fellow student where it could be found. Interest in *what others do or say* was a less prominent theme, arising in a situation where a domestic student initiated interaction after overhearing international students speak in their native language. This engagement may have also been stimulated through questions about what another student was doing.

Sometimes, it was not possible to determine the initiating student on the basis of the data. In many interactions related to group projects, for instance, commencement could not be ascertained because the students gathered around their projects and engaged in frequent discussions during the filmed sequences. Other such challenges arose when recording began in the middle of an interaction or when some students were only partly visible on the camera frame while substantial surrounding noises made it impossible to grasp who started to speak first. The face masks also presented difficulties for lip reading as a way of pinpointing who began a discussion. For situations wherein the initiating party could be clearly identified, such behaviour was equally divided between the domestic and international students. On an individual level, some students might stand out as more eager to initiate interaction, but this study was intended to acquire an overview of such engages and how they work, not single out active interactants.

The recordings show that the international and domestic students demonstrated respect for each other, as evidenced by actions such as quickly offering tools or workspace to peers. In one situation, an international student asked a domestic learner working at the same table whether it was acceptable for the former to play music on their phone.

Language use

Interaction between the international and domestic students was mostly verbal or verbal in combination with body language. Verbal exchanged with the help of tools was also observed in some situations. The language that they used when interacting with each other was English, with the international students occasionally using other languages when communicating with peers who share the same country of origin or language. The domestic students primarily used Swedish in interacting with each other.

The recordings show no instances in which interaction between the international and domestic students ended due to insufficient English proficiency. Although they sometimes paused to reflect or did not know a specific word, they managed communication by deriving support from sketches, gestures or descriptive explanations. In this way, verbal interaction evolved into multimodal exchanges involving materials and body language. In one situation, students working on a group project received guidance from the teacher in English, after

which the teacher briefly addressed the domestic student in Swedish. The domestic student then summarised the information in English for the rest of the group.

Overall, language was not a problem for the students as they interacted, but the video material precluded drawing conclusions about why some of the students participated in engagement more than others. Possible influencing factors include individual personality traits, social disposition or students' own perceptions of their English skills.

Discussion

The craft studios were central to facilitating interaction among the students. To some extent, the international and domestic students tended to sit separately during the craft lessons, as was observed during the outdoor day, when the students worked with wood carving while the international students collaborated in smaller groups; no interaction between them was recorded. This may have been driven by the occurrence of the lesson early in the course, during which the students could have been unfamiliar with one another. The separate seating in the classroom aligns with the findings of Dunne (2009) and Harrison and Peacock (2010), but a key difference is that in our setting, such an arrangement is not fixed. The mobility inherent in craft education allows students to change workplaces during a lesson or walk past others on their way to obtaining materials or tools. This mobility was evident in the recordings, wherein the students periodically moved in and out of the camera frame and changed their workstations; their ongoing craft projects required the use of different spaces in the studios. As a result, spontaneous encounters were possible, with the students actively approaching others to observe their work and engage in discussion. This kind of mobility corresponds with Gyllerfelt's (2023a, 2023b) assertion that movement in craft can relate to students' own work or have a more social character.

The students' meetings over a craft project parallel the research of Gyllerfelt (2023a) and Johansson (2002), which highlight how craft projects serve as a mediating tool. This was clearly reflected in the present study, wherein considerable interaction between the international and domestic students concerned, or originated from, the craft projects. A physical project or material eases the efforts of other students to join an ongoing interaction, as illustrated in Table 2 and 4.

Interaction could be observed in group work and other situations, as well, but students who worked in groups more often had ongoing interactions between them, indicating that collaboration naturally paves the way for increased exchange between students. The group work stretched over several lessons, thereby creating possibilities for repeated interaction across a longer period. The students' interaction in various situations, including those

beyond group work, distinguishes the current research from that of Harrison and Peacock (2010), who reported that some domestic students interact with international students only through group work. In the present study, the students were divided into mixed groups by the teachers, and as Dunne (2009) highlighted, this increases possibilities for interaction. Furthermore, the teachers' division of the students was a conscious choice uninfluenced by students' seating preferences. This contrasts with Dunne's (2009) findings, which showed that groups are often formed on the basis of student seating in a classroom. The characteristics of craft education and the group work conducted in this study enhanced opportunities for interaction and can be assumed to be similar to laboratory-based collaboration, which the domestic students in Dunne's research (2009) highlighted as a factor enhancing the prospect of engagement.

The analysis of the interactions on the grounds of the forms of communication reported by Andersson et al. (2016) indicated that the students in the current study mainly used verbal methods and verbal with the help of body language when communicating with each other. They mostly gestured with their hands as they spoke, but body language also included touching other students' projects or materials (Table 4). Some verbal interaction with the help of tools was also seen. The use of body language and tools in interaction is effective when a student is unsure about how to express themselves in English, in which case the threshold for initiating interaction can also be assumed to be lower. The way that international and domestic students interacted with each other in the presented work is similar to the communication taking place between the newly arrived pupils and teachers investigated by Gyllerfelt (2025) and Gyllerfelt and Johansson (2021).

Vinther and Slethaug (2015) reported that domestic students and teachers in a non-native English context might communicate with each other in their native language, which can create language barriers for international students. Similar tendencies were observed in the present study, but interaction involving international students most often occurred in English. The native language was used despite the presence of international students typically to clarify specific terms in Swedish when the English term appeared unclear. Craft is characterised by subject-specific terminology that students might master mostly in their native language. Using the native language to clarify a term was also reported by Väänänen et al. (2025).

Notably, in one situation wherein a teacher gave instructions in Swedish to a domestic student, the latter seemed keen to ensure that the international students also understood the conversation. The domestic student summarised and translated the instructions into English for the international students involved. It is important to note that the course language was Swedish, although instructions and guidance were also provided in English to

advance participation from the international students. Swedish thus automatically served a central function in the course, which could have become problematic, as discussions conducted in Swedish may have excluded the international students.

The international and domestic students supported each other while working on their craft projects, enabling learning to take place in a social and cultural context (see also Andersson & Johansson, 2017). The students, especially those cooperating on group projects, could discuss an issue for a while then work silently on their project before once again interacting with each other. This may be a result of students shifting between the outer and inner learning spaces (cf. Andersson et al., 2016; Illum, 2021). When students resumed interaction about a craft project, they moved from the inner learning space to the outer to seek help or discuss the project. When the need for help arises in the inner learning space, the students did not necessarily turn to the teacher but instead approached a fellow student, as also observed by Andersson et al. (2016). As illustrated in Table 3, the student providing help may not have been certain of the correct answer, yet the interaction enabled joint problem-solving among the students.

Not all interaction is a result of students being in the outer learning space and needing help or advice but may also be triggered by a social function. This interaction, which may concern both craft projects and more personal aspects, can partly be maintained while working with projects, as shown in the examples and extracts in the results. The interaction that can be observed aligns with students' own experiences reported by Brännkärr et al. (2025).

Conclusion

Through observations of video documentation, this study shed more light on the characteristics of interactions between international and domestic students during craft lessons and how these situations emerge. The findings demonstrate that craft courses provide an arena in which the learners of interest can meet and engage with each other.

The activities in a craft course are such that they, to some extent, minimise the risk of barriers that have been reported in previous research on interaction between international and domestic students. Craft education offers, due to its character, naturally occurring engagement. Most interactions concern a course, its content and ongoing craft projects in one way or another, but possibilities for more personal exchange also arise, partly because students have a physical object from which to commence discussion and partly because they can interact while working on course assignments. This interaction can occur repeatedly during a course, thereby creating opportunities for students to become closer to one another.

It is important for teachers to be aware of the role that they can play in advancing interaction between students. For example, incorporating group work into a craft course enhances exchange, particularly when students are assigned to mixed groups using a clear strategy rather than having them form teams themselves or dividing them based on seating arrangements. The extent of interaction varied among students, however, with groups of three or four students appearing to interact more frequently than one consisting of only two students. Group size should therefore be considered carefully. Furthermore, teachers can encourage students to view each other as valuable resources and engage in fellow students' projects. Emphasising encouragement of interaction may be particularly essential when students come from various educational backgrounds. The mobility inherent in craft education was consistently evident in the recordings and likely contributed to increased exchanges compared with situations where students remain in the same place throughout a lesson.

Awareness of the external determinants of interaction between international and domestic students in a craft course can help teachers plan courses and activities that promote exchange and communication among students. Interaction related to course content and craft projects can be reinforced through course design, but interaction involving personal aspects is more difficult to plan. Nevertheless, elevated overall interaction raises the likelihood that communication will extend beyond course-related aspects.

Limitations and future research

A limitation of the present study is the use of two unsupervised stationary cameras, which may have resulted in missed interaction episodes when students moved outside the camera frame. An alternative design that could have captured student interactions more effectively would have been for the main researcher not to act as the course teacher and instead focus on monitoring the recordings. In such a design, a handheld camera could have been used to follow students as they moved within the studios during ongoing exchanges. Nevertheless, interaction situations might still have been missed because students still spread out in the craft studios during the lessons, making it challenging to capture all participants and interactions. In addition, continuous close observation with a handheld camera might have increased students' sense of being observed. Access to better equipment for audio recording would also have strengthened the quality of the data, particularly in terms of capturing all verbal communication. Finally, future research could extend beyond student interaction to explore how international students encounter and interact with craft materials and tools.

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