

Teachers' goals and strategies for classroom seating arrangements:

A conceptual qualitative replication

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Abstract

Although it has a lot of benefits, elementary school teachers are not trained in seating students. Hoekstra et al. (2023) identified this problem and sought to identify the goals and strategies elementary school teachers kept in mind when making classroom seating arrangements in order to base future education for teachers on this. The present study is a conceptual replication of Hoekstra et al.'s study in Groningen. Through semi-structured interviews of four teachers, the present study finds that the general findings of Hoekstra et al. are generalisable to this population, but further research needs to be done in order to base education on classroom seating arrangements for elementary school teachers on it.

Teachers' goals and strategies for classroom seating arrangements: A conceptual qualitative replication

The social relations between students are impacted by their teacher's emotional responsiveness and classroom management (Yoon et al., 2020). Faur & Laursen (2022) found that the physical proximity between two students in the classroom seating arrangement made by the teacher can increase their likelihood to become friends. New teachers are usually not taught strategies for making seating arrangements when they start and what goals they can achieve with them (Gremmen et al., 2016; Simmons et al., 2015). However, only a short training can already do a lot to make them feel more confident (Dicke et al., 2015).

There doesn't seem to be one "correct" approach to classroom seating. What seating strategy works can depend on students' demographic traits. For example: Flexible seating can have positive consequences for girls, but negative or no effects on boys (Bluteau et al., 2022; Halidane et al., 2023). On top of that, one kind of classroom seating arrangement can also be advantageous to achieve one goal, but be detrimental to achieving another. For example: Clustered seating makes it easier for the students to collaborate, but it can lead to more off-task behaviour (Simmons et al., 2015).

This study will replicate the study conducted by Nathalie Hoekstra, Yvonne van den Berg, Tessa Lanse, Tim Mainhard and Antonius Cillessen, titled: Teachers' goals and strategies for classroom seating arrangements: A qualitative study. This study was published in 2023, in *Teaching and Teacher education*. The study used semi-structured interviews to research what elementary school teachers' goals were when creating classroom seating arrangements and what strategies they employed to reach these goals.

Hoekstra et al. (2023) identified the importance to make a distinction between the strategies and the goals teachers keep in mind when assigning seats to students to gain a better understanding and establish guidelines. In a small sample of elementary school teachers in the Netherlands, they found that teachers mostly had both academic and social-emotional goals. The strategies to achieve these goals differed and some teachers even had opposing strategies to reach similar goals.

It's important that studies are replicated to test their falsifiability (Field et al., 2019). Not many replications of qualitative studies have been done until recently (Plucker & Makel, 2021). This could be because it remains heavily debated whether falsifiability should even be a quality criterion for qualitative research (Aguinis & Solarino, 2019; Bryman et al., 2008).

However, Leppink (2017) argues that what matters for a study to be fit for replication is not whether it's qualitative or quantitative, but how transparent the paper is in its documentation of the process. Transparency is considered to be an important criterion for qualitative research by more researchers (Aguinis & Solarino, 2019; Bryman et al., 2008). Complete transparency is harder to achieve in qualitative research, given that qualitative data more often contains confidential information (Tsai et al., 2016).

Leppink (2017) also argues that the goal of replication, regardless of the method or field of the original study, is to accumulate a stronger foundation for future research. Hoekstra et al. (2023) had a small sample (N=13), which warrants doing a conceptual replication to test generalisability to a different population. This could strengthen the findings of the original study and together it could

contribute to educating (future) teachers on the way they can impact their students through classroom seating arrangements.

This replication will be done with teachers working at elementary schools in Groningen. The original study by Hoekstra et al. (2023) says the teachers are from “The Netherlands”, but doesn’t further specify the distribution of areas within the country. This in and of itself is not unusual, as the Netherlands is a small country. The fact that this study is done with only teachers working at schools in Groningen could still pose a difference.

The question this paper aims to answer is: *What are the goals and strategies of teachers in Groningen with regard to seating students?* Using the sub-question: *How do the goals and strategies of teachers in Groningen with regard to seating students differ from the goals and strategies of teachers with regard to seating students found by Hoekstra et al. (2023)?* It is expected that teachers will have both academic and social-emotional goals, but will use different strategies to reach these goals, as Hoekstra et al. (2023) found.

Methodology

Sample characteristics

Four teachers working at schools in and around Groningen were interviewed in 2025. Two researchers conducted two of these interviews each. To be included as a participant the teacher had to be actively teaching at an elementary school in or around Groningen and be comfortable having a conversation about seating in Dutch. Such a target sample was chosen based on the target sample of the original study by Hoekstra et al. (2023), with a specification of geographical location due to limited time and access to resources. The requirement relating to one’s comfort speaking Dutch was chosen to be able to conduct the interviews in Dutch, using the original interview protocol used by Hoekstra et al. for their study. One of the interviews was conducted with a teacher working at a school located in Drenthe, but it is geographically a lot closer to Groningen than any other city. The

participants were contacted through the e-mail address for their school's management, director or administration.

Participants were recruited through a sample of convenience, based on their interest in participating. As a result, there was no room to ensure the variation within the sample. All four teachers in the sample taught one class, spread across three different schools. Two teachers came from the same cultuurprofielschool, and the other two teachers came from two different public elementary schools. The sample included two women and two men. Two teachers taught year eight of elementary school (the final year in Dutch elementary education, ages 11-12), one taught year four (ages 7-8) and one taught year six (ages 9-10).

Interviews

Participants were told that the interview was expected to take about half an hour, but that there was a lot of room for fluctuation depending on how the interview would go. None of the interviews lasted more than half an hour, the longest lasting 29 minutes and the shortest lasting 18 minutes. In total, one hour and 40 minutes of recorded audio were collected. The interviews took place at the schools the teachers worked at.

The interviews were semi-structured, using eight pre-determined questions from the interview protocol that Hoekstra et al. (2023) used for their study. The protocol starts off by asking more general questions about the teacher's process when assigning seats, with questions such as: "Could you please tell me what were your most important considerations for designing the seating arrangement as it is now?" It goes into some more specifics of the teacher's process, by asking questions like: "To what extent do you take into account students' position relative to yourself when designing your seating arrangements?" And finally, the teacher is asked more about their views on the concept of teachers seating students in general, for example what beginning teachers should know: "What would you advise novice teachers with regard to designing seating arrangements?" The audio of each interview was recorded and transcribed.

Analysis

The transcripts were analysed following the steps as they were described in Hoekstra et al. (2023) as closely as possible considering the available time and resources.

Step 1: Bracketing

In qualitative research, bracketing serves to identify and set aside the biases a researcher might have going in to a research topic. Qualitative research is always subjective in nature, but through bracketing it becomes more clear from what angle a researcher looked at the data, for both the researcher themselves and the reader of the report. Hoekstra et al. (2023), did this by laying out the academic and professional experience with the topic of every researcher involved and making clear which researchers were involved with which steps of the analysis. The complete analysis in this replication was conducted by one researcher.

Step 2: Horizontalization

The transcripts were read and all statements that pertained to what the teachers wanted to achieve or how they wanted to achieve it were selected. When selecting these statements the distinction between goals and strategies was observed, but in some statements these two concepts were indistinguishably interwoven. During this step, 238 significant statements were selected.

Step 3: Meaning Units

The selected statements were each assigned a meaning unit to get a clearer, more unified sense of the meaning of each statement. Some unique statements could be assigned the same meaning unit.

Step 4: Clustering in Themes

The meaning units found in step 3 were grouped together based on themes. Some of the themes Hoekstra et al. (2023) identified in this step were built up out of smaller subthemes. For example: *Theme 1: Student academic functioning (goal)* included statements pertaining to a student's academic independence, collaboration and overall academic functioning. During this step

in the replication, hybrid coding was used. This means that the aforementioned subthemes found by Hoekstra et al. were continuously referred to, but when deemed appropriate, they were deviated from. The new (sub)themes found this way were grouped with the larger themes Hoekstra et al. identified or formed their own theme. Some meaning units can fall under multiple themes. 13 themes were identified. *Theme 10: Taking into account contextual factors* identified by Hoekstra et al., one was discarded and three new themes were added. Those being *Teacher social-emotional functioning*, *Accommodating students' impairments* and *Relinquishing control*.

Step 5-7: Teachers' goals, teachers' strategies and integration

In this step, the goals (step 5) and strategies (step 6) were described using the themes found in step 4. Five themes (two new) were filed under goals and eight themes (one new) were filed under strategies. In step 7, these goals and strategies were integrated to create an overview of the general seating process.

Results

As mentioned in the methodology section, 13 themes were identified, five of which being goals and eight of which being strategies. The goals contain two new themes when compared to the original study by Hoekstra et al. (2023) and the strategies contain one new theme. One of the original strategies identified by Hoekstra et al. was discarded. The exclusion of this theme will be further explained in *Theme 13: Relinquishing control (strategy)*. The 13 themes found will be listed, comparing each theme's occurrence in this replication's data to their occurrence as reported in Hoekstra et al. Finally, these themes will be interpreted and compared to Hoekstra et al.'s findings, with a specific focus on the patterns identified by Hoekstra et al.

Teachers' goals

Theme 1: Student academic functioning (goal)

All teachers mentioned keeping academic goals in mind when assigning seats. For the most part, the goal to promote academic collaboration among students was emphasised. This included the goal to get students of different academic levels to help one another: “If I’m busy (...), someone can say [to someone in their group] ‘hey, I don’t understand, can you explain?’ and that’s easier if someone of a different level is seated next to them.” Teachers also expressed the goal to teach students how to collaborate with students they liked less: “(...) sometimes they also just have to learn to collaborate with someone who maybe doesn’t suit them as much (...)” Other goals pertaining to more general academic functioning were also brought up. This included the goal to keep more distractable students focussed on their work: “It is nice to be able to keep an eye on [distractable students], (...) in terms of studying.”

Comparison to Hoekstra et al. (2023) Hoekstra et al. (2023) also found academic functioning to be a recurring goal among teachers. Within this theme, they identified the subtheme of academic independence. This theme was not brought up by any of the participants in this replication.

Theme 2: Student social-emotional functioning (goal)

All teachers mentioned keeping social-emotional goals for individual students in mind when assigning seats. A large part of this concerned the social-emotional wellbeing of the students, like their feelings about their position in the classroom seating arrangement: “(...) he just likes that he stays in one place.” A subtheme that was brought up by all teachers was the goal to promote the students’ social responsibility. One of the teachers who taught year eight – meaning that most of these students would go to high school soon – identified the importance to learn to be responsible in preparation: “(...) he’s gonna have to do that in high school as well. Stand up for himself (...), so I try to make him stronger in that aspect.” The students’ responsibility to appropriately interact with the people they were seated with was also emphasised: “When I present the classroom seating arrangement I say ‘well, you chose each other [to sit next to]. I don’t know if it’ll work, but make

sure you stay in your seats.’’ One teacher even made an appeal to the students’ sense of responsibility to help achieve a secondary goal: ‘‘I make [disruptive students] the leader of their group. (...) They will feel responsible and exhibit less disruptive behaviour.’’

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) the theme of social-emotional functioning was also very present, but the subtheme of social responsibility was not as apparent.

Theme 3: Group functioning (goal)

All teachers mentioned keeping the functioning of the larger group in mind when seating students. Group cohesion is an important goal that was at times brought up in a very literal sense: ‘‘I see that [my seating strategy] helps (...), because you build a very good atmosphere.’’ Teachers also reported their students forming new friendships with children they were seated with: ‘‘(...) they weren’t friends and suddenly they are seated in a group together and [a friendship] arises.’’ Another important theme for group functioning is to prevent disruptions: ‘‘You can prevent that troublemakers are seated together, (...) [because when they are] it starts with one small thing, (...) but it gets amplified.’’

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) the theme of group functioning was also observed. A subtheme that was less present in this replication was the goal to preserve calmness in the classroom.

Theme 4: Teacher social-emotional functioning (goal)

All teachers mentioned keeping their own social-emotional functioning in mind when seating students. A big part of this was the goal to build a relationship with their students, especially when a teacher is new for their students: ‘‘(...) for [the student teacher] it is easier to get to know the students like this.’’ The teachers also mention wanting to preserve their own emotional well-being with their seating choices: ‘‘Sometimes it’s nice to seat a child who is more restless (...) a bit further away. (...) To give myself some peace.’’

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) this theme was not reported at all. While the theme was not observed very often in this replication (eight quotations), it is notable that all teachers in the sample brought it up unprompted.

Theme 5: Accommodating students' impairments (goal)

All but one teacher mentioned keeping the accommodations in mind that students with various impairments might need when making a classroom seating assignment. This concerned impairments related to neurological disorders more commonly assumed to cause problems in an academic setting like ASD or ADHD: "(...) I also have two students who are autistic and that one, for example, always gets the same seat." Visual impairments were brought up: "There has been a student with [impaired] vision before, they always had to sit in the front." One child was brought up who needed accommodations outside of the academic context: "I have [a student] that you have to make sure she eats her food and drinks enough."

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) this theme was not reported at all.

Teachers' strategies

Theme 6: Choosing a specific physical arrangement (strategy)

All but one teacher mentioned changing up the physical arrangement depending on the circumstances. This one teacher had a strong conviction for their physical arrangement of choice (groups): "I would always seat students in groups and not seat them in pairs for example." Another teacher mentioned starting the year in rows, but changing to groups when the students "earned" it after a few weeks: "Once they can just work in silence, I indicate (...) 'you earned it, we're going to make groups now'" One teacher indicated that they would normally seat their students in groups, but use rows for certain subjects to improve engagement: "There are subjects, mainly spelling and writing and often math as well, that I place them in pairs." The last teacher changed up the physical

arrangement often and made use of some less standard arrangements: “Now [the students] wanted the tables arranged in a U-shape because they saw it (...) and they asked ‘can we [sit like that] sometime?’ and I said ‘that’s okay, we will try that sometime’”

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) a distinction was made within this theme between rows and groups. There was also an option for teachers who chose to use a mix of both, but no mention of any other kind of arrangement.

Theme 7: Mixing gender (strategy)

All teachers brought up the way they distributed gender in their classroom seating arrangement independently exactly one time during their interview. Three of them explicitly mentioned mixing gender, like for example: “I usually try to put two girls and two boys in a group.” The fourth teacher didn’t mention mixing genders, but they mentioned an uneven distribution being undesirable: “[male students] won’t appreciate that five boys are seated together and one is sat with five girls.” This teacher also mentioned having “only” eight boys in their class.

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) this strategy was described as “one of the main strategies” teachers employ. Considering none of the teachers in this replication’s sample mentioned gender more than once, the same cannot be said in this case.

Theme 8: Separating students (strategy)

All teachers mentioned separating students as a strategy they employed when seating students. Some of the teachers were more reluctant to deliberately separate students, emphasising the temporality of the separation: “In particular at the start if you think ‘those two don’t really fit together right now’ (...) then I might make an adjustment.” Other teachers were not as reluctant, reducing contact between the two students as much as possible. “If I think there might be some friction between [two students], I put one [on one end of the classroom] and one [on the other end] with their backs turned to one another.”

Comparison to Hoekstra et al. (2023) The report of this theme in this replication is fairly comparable to that in the study by Hoekstra et al. (2023).

Theme 9: Pairing/grouping students (strategy)

All teachers mentioned pairing or grouping students based on certain criteria. A few indicated allowing students to sit with their friends at the end of the year: “So I said ‘hey, with the last change [in seating arrangement] I will in any case make sure that you will sit with a friend.’” Some teachers would choose to make groups based on a shared characteristic: “Groups with a common interest, I sometimes seat them together.” While other teachers specifically pair students who are at odds: “Sometimes with children who just had an argument, and now that we are sitting in pairs, I will seat them next to each other on purpose.” Some teachers also mentioned placing students of different academic levels together: “I like it when [students of different academic levels] are sitting mixed together.”

Comparison to Hoekstra et al. (2023) Hoekstra et al. (2023) also reported some teachers seating students in conflict together while other teachers would seat socially vulnerable students with classmates who could comfort them. They reported some teachers paired students on the same academic level, while this replication did not find that.

Theme 10: Seating students in specific classroom areas or at a specific distance to the teacher (strategy)

Three teachers mentioned seating students in a specific part of the classroom or in a specific position relative to themselves. Some students were deliberately seated in the front of the classroom: “[students with visual impairments] all have to sit in the front, or they won’t be able to see the board.” Some students were deliberately seated in the back or at the edges of the classroom for their own peace: “[students] indicate they like it that there’s nobody sitting behind them.” Some students were deliberately kept close to the teacher: “For some students it is nice to have a fixed

place. [student] is one of them and they have been sitting [at the teacher's desk]." Teachers indicated that students being positioned further away from them had to do with trust: "(...) the students positioned further from [table where the teacher often sits] are a bit more independent."

Comparison to Hoekstra et al. (2023) The report of this theme in this replication is fairly comparable to that in the study by Hoekstra et al. (2023). A notable example of this is the desire expressed by teachers to make sure the academic level of a student did not dictate their placement in the classroom too much: "I try to be careful with [seating academically weaker students in the front of the classroom] and sometimes also place a stronger student at the front."

Theme 11: Weighing and prioritizing (strategy)

All teachers mentioned weighing and prioritizing different strategies and goals when seating students. Some teachers prioritised teaching the students responsibility over other factors, like whether the teacher thinks students should be seated together: "I do give them the chance to (...) learn to adjust to the rules. So I don't think beforehand 'oh, that will probably not work, I won't seat them together' (...)" Sometimes teachers also prioritised teaching the students responsibility over the student's comfort: "We ask students (...) 'with whom can you work well?' and you try to keep that in mind, but sometimes they just have to learn to collaborate with a student they like less." Some teachers mentioned the conflict between wanting to keep more disruptive students in check and preserving their own enjoyment in teaching: "I have [a student] who can really hang and moan and yawn. (...) Sometimes he sits with me so I can say 'keep your head up', (...) but now he's seated nice and far." Teachers who brought this conflict up expressed switching up which side they satisfy.

Comparison to Hoekstra et al. (2023) In the study by Hoekstra et al. (2023) it was emphasised that in most cases, the social goals were prioritised over academic ones. This was something that occurred less in this replication. Most of the cases where there was a clear prioritization of one goal over others, this goal was prioritised over both academic and social goals.

For conflicts between academic and social goals, teachers mostly mentioned switching up which of the goals they would satisfy.

Theme 12: Changing the seating arrangement over time (strategy)

The teachers all changed around their seating arrangements multiple times per year, to varying degrees. Most teachers mentioned changing the arrangement every break. As mentioned when discussing *Theme 6: Choosing a specific physical arrangement*, most teachers changed up the physical arrangement throughout the year or even throughout the day. This was almost always done keeping academic goals in mind: “For debate lessons we [put the tables in a U-shape] so you can really stand in the middle of the class. With presentations as well (...) all eyes are on them.” To decide what to change from one seating arrangement to another, teachers mentioned keeping in mind the conflicts mentioned in *Theme 11: Weighing and prioritizing*: “[seating a calmer student next to a disruptive one] is difficult (...) because then you’ll get ‘last year I had to sit to that annoying one all the time’ (...) so that’s something you really have to switch up.” Teachers also mentioned making small changes between changing the entire classroom seating arrangement as they saw fit: “Sometimes you think ‘I have the perfect arrangement’ and then after a week you think ‘we have to shuffle things around here and there’ and I will do that, (...) but I don’t usually completely overhaul the groups.”

Comparison to Hoekstra et al. (2023) Hoekstra et al. (2023) did not report teachers changing up the seating arrangement throughout the day, depending on the subject. The highest frequency they reported was once every week. Otherwise, their report of this theme is fairly comparable to that in this replication.

Theme 13: Relinquishing control (strategy)

All teachers mentioned looking elsewhere to help with making decisions when seating students. They did this in one of three places. The first place teachers looked for help was other

teachers who were familiar with the class, like the teacher who taught them last year: “(...) the first [seating arrangement of the year] is based on information I got from their previous teacher.”

Teachers also asked the students what they would prefer, from indulging small requests from individual students: “There’s a few students (...) with whom we discussed what they would find a nice place to sit.” To leaving the students in charge of most of the process of arranging seats: “The way the groups are built up right now, mostly came to be because [the students] chose for it themselves.” The final place teachers looked to help them make decisions was random computer generation. All teachers mentioned having tried it, but two preferred making the arrangement themselves. The other two teachers mentioned using the computer generated seating to encourage the students to interact with students they might not interact with otherwise: “The positions of the students have been shuffled by the computer (...) I think they have enough time to see their friends outside of school and I chose this so they can get to know each other better.”

Comparison to Hoekstra et al. (2023) Hoekstra et al. (2023) did not report this theme at all. Keeping in mind the students’ preferences was briefly mentioned by Hoekstra et al. in *Theme 10: Taking into account contextual factors*, but it was emphasised that the teachers had the final say. In this replication, multiple teachers mentioned deliberately letting students’ preferences completely overrule their own decision making, so the students’ preferences were not just “taken into account”.

Integration of goals and strategies

Over all, teachers were positive about making a classroom seating arrangement and the way they observed it impacted the social climate among and overall well-being of their students. All teachers had (most of) themes 1-5 in mind as goals when making a classroom seating arrangement and employed (most of) themes 6-13 as strategies to achieve these goals.

The five goals found can be put into three categories. Those being goals for the students as a group, the individual student and the teacher. Within the goals for the students as a group it was hard to make a distinction between social and academic goals, these being addressed simultaneously

most of the time. The subtheme of preserving calmness found by Hoekstra et al. (2023) mostly wasn't mentioned by the teachers interviewed for this replication. What was mentioned a lot was creating a nice (“gezellig”) atmosphere and preventing disruptions. This means that teachers in Groningen are inclined to prioritise students being social and energetic over them being calm, but make a distinction between positive social and energetic behaviours and negative ones.

The goals for the individual student could be separated into academic goals, social goals and goals to accommodate impaired students. Pertaining to the individual student's academic goals, Hoekstra et al. (2023) identified a subtheme of promoting academic independence. Teachers interviewed for this replication did not mention this goal. When a student's academic functioning was negatively impacted by other students, they opted to reduce contact between these students. In this way, the student remained dependent on the absence of distractions for their academic functioning. This is in contrast to a subtheme that the teachers interviewed for this replication did bring up, namely promoting social responsibility. For this goal, teachers would specifically group students with other students who negatively impacted their social behaviour and academic collaboration in order to challenge the students to behave appropriately. Hoekstra et al. did not report this subtheme at all. This suggests that elementary school teachers in Groningen have a more collectivist approach to promoting the sense of responsibility of their students compared to the general population of elementary school teachers studied by Hoekstra et al.

The goals for the teacher themselves were all to improve their own social-emotional functioning. It was mostly brought up in times when it was at conflict with the goals for the students, though teachers also mentioned getting joy out of satisfying the academic and social-emotional goals of their students. This goal was not reported by Hoekstra et al. (2023). Thus, teachers in Groningen consider their own social-emotional well-being to be important when creating a classroom seating arrangement, suggesting a less selfless approach to seating than the general population of elementary school teachers studied by Hoekstra et al. has.

Three themes were categorised as goals for the individual students, and the goals for the students as a group and the goals for the teacher got one theme each. All teachers reported to have these three categories of goals in mind when making a classroom seating arrangement. The only goal that wasn't kept in mind by all teachers was the goal to accommodate the impairments of students. The teacher who didn't mention this goal did mention having a smaller class of 20 students. It is likely that none of these students had any impairments that need accommodations, so this goal not being mentioned by this teacher doesn't mean that it's not something they would keep in mind if it were applicable. Therefore, it is likely that all teachers keep the same kinds of goals in mind when seating students.

Three out of the four teachers were very passionate about a specific strategy, those being choosing a specific physical arrangement, letting students influence seating and changing seating arrangements. For these three teachers always employed these strategies and were very positive about being able to achieve their goals in this way. While the teachers had the same goals in mind, these strategies at times contradict each other. For example, one teacher was very passionate about always seating their students in groups and never in rows of pairs, while the teacher who was very passionate about changing the seating arrangements multiple times a day sometimes changed the seating arrangement to rows of pairs. This suggests that a teacher's approach to seating students can be very personal and differ from person to person without one being better than the other.

Only one of the eight strategies was not reported by all teachers, that being seating students in specific areas. The only teacher who didn't mention employing this strategy was the same teacher who used unconventional physical arrangements and switched them throughout the day depending on the subject. This teacher values frequently changing up the physical arrangement in their classroom, so it makes sense for them not to seat particular students in specific areas.

The only new strategy that emerged in this replication as opposed to Hoekstra et al. (2023) was the strategy of relinquishing control. Most of the times when teachers did this, it was a matter

of them relinquishing control of the seating arrangements. This strategy was often used to realise a goal that this replication found as a subtheme that also didn't occur in Hoekstra et al., that being promoting social responsibility. Thus, teachers in Groningen recognised that while they could control certain factors, they could also deliberately leave certain aspects out of their control. This challenged their students to learn how to handle unpredictable factors.

Themes found by Hoekstra et al. (2023)

The three patterns found by Hoekstra et al. (2023) also emerged in this replication. First, they found that *teachers used different strategies to achieve similar goals*. An example of this pattern from this replication is that two teachers who both wanted to keep a disruptive student from distracting their classmates, yet employed opposite strategies to achieve this. One teacher mentioned specifically separating such a student from classmates and even placing them in a separate room. Another teacher mentioned placing them with classmates who might call them out on their disruptive behaviour.

Alternatively, this replication – like Hoekstra et al. (2023) – found that *teachers used similar strategies to achieve different goals*. An example of this pattern from this replication is that teachers would seat students in the back of the classroom, while keeping different goals in mind. One teacher would seat a disruptive student in the back with the goal to give that student rest and help them focus (i.e. promote academic functioning), while another teacher would seat a disruptive student in the back with the goal to be less bothered by this student (i.e. promote teacher social-emotional functioning).

Finally, Hoekstra et al. (2023) found that *teachers adapt their goals and strategies to fit the needs of the individual student and those of the group*. An example of this pattern from this replication is that a teacher would seat a student who they thought would benefit from gaining more social responsibility next to a student that would challenge their social responsibility, when normally these students would not be sat together to promote academic functioning. Another

example was that a teacher indicated that they were more likely to opt for a specific physical arrangement for a group that was more distractable. Over all, this replication strengthens Hoekstra et al.'s findings that teachers have a dynamic approach to seating based on the different needs of individual students and those of the group and don't strictly follow a fixed goal-strategy approach.

Discussion

This study examined the goals that teachers working at elementary schools in Groningen kept in mind when making a classroom seating arrangement and the strategies they employed to achieve these goals. In doing this, it conceptually replicated the study by Hoekstra et al. (2023) into the same subject. In this discussion, first the results will be summarised to answer the research questions. The limitations of this replication will be discussed. Finally, future recommendations for both practice and research will be given.

Answering the research questions

This replication aimed to answer two questions, those being: *What are the goals and strategies of teachers in Groningen with regard to seating students?* and *How do the goals and strategies of teachers in Groningen with regard to seating students differ from the goals and strategies of teachers with regard to seating students found by Hoekstra et al. (2023)?*

The goals and strategies of teachers in Groningen when seating students

Teachers in Groningen have different goals and strategies, but they share some common themes. All teachers kept the academic and social-emotional functioning of their individual students and the class as a whole in mind, while also preserving their own social-emotional functioning. To do this, they choose a specific physical arrangement like groups of tables, rows of duos or even putting the tables in a U-shape. They placed their students in this arrangement, keeping in mind their position relative to one another and to the teacher themselves. At times, they left (some of) the decision making up to colleagues, students and even random computer generation. Sometimes it was not possible for a teacher to realise all of their goals because the strategies they wanted to

employ to realise two or more of them simultaneously were in direct conflict. In these conflicts, they would at times prioritise their students learning to be responsible for their own behaviour by placing them next to a student that might challenge them to act more disruptively. More often, they would decide to switch between which goal they prioritise each time they changed the seating arrangement around, which they all did at least four times a year and some even did multiple times a day.

There were a lot of differences within this small sample alone in terms of the kind of strategy teachers were passionate about, but teachers were able to achieve the same goals with this. This is in line with known research saying that there is no one size fits all approach to seating students (Bluteau et al., 2022; Halidane et al., 2023; Simmons et al., 2015)

These findings show that teachers tackle seating children as a dynamic process that requires them to continuously review the way the seating arrangement affects their students. They are attuned to their students' needs and adapt the seating arrangement accordingly. They are also aware that they do not always know the perfect solution and that choices made by outside parties work just as well or even better. In general, they are confident and positive about their process.

Comparison of the results to those of Hoekstra et al. (2023)

Hoekstra et al. (2023) identified three themes in elementary school teachers' process with regard to seating students, those being that Teachers use different strategies to achieve similar goals, that teachers use similar strategies to achieve different goals and that teachers adapt their goals and strategies to fit the needs of individual students and the group. These three themes also emerged in this replication, strengthening the generalisability of their findings.

There were some differences found. When it comes to goals, teachers in Groningen promote a social and energetic environment in their classroom, where Hoekstra et al. (2023) found that teachers prefer to preserve calmness. Teachers in Groningen also had more collectivist approach to challenging their students to improve, choosing to do this in cases where it would improve

collaboration and social cohesion, but choosing not to do this in cases where it would improve academic independence. This makes sense, considering that while Groningen is still a city, its direct surroundings are more rural than for example the Dutch Randstad. In general, rural areas have a more collectivist culture than urban areas (Kagıtcıbası, 2013). Teachers in Groningen were more concerned with their own emotional well-being than Hoekstra et al. reported.

In terms of strategies, the only major difference is that teachers in Groningen at times choose to relinquish control to outside parties like students, other teachers and random computer generation.

Limitations

Due to the time constraints that come with a bachelor thesis, there are some limitations in this study.

The participants were sampled through convenience, based on their interest, which resulted in a small sample (N=4). This decision was made because there were insufficient time and resources to ask and incentivise more teachers to participate and to conduct and transcribe these interviews. This could have led to a selection bias. For example, two out of the four participants expressed that they participated because they have a specific, elaborate way of seating students. Therefore, it is likely that the population of teachers who put less time and thought into seating students is underrepresented in this study's sample. The small sample means that thematic saturation could not be achieved in analysis and in combination with the potential selection bias it means that the findings of this study might not be generalisable to the population of teachers in Groningen.

The interviews were conducted and transcribed by two different researchers. The decision to share this work was made to make the sample as large as possible considering the demand that the bachelor thesis be written by a single student researcher, while limiting the workload on that one student researcher. This means that there are some differences in conversation style during the interviews. For example, one researcher used more small encouragements like “uh huh” and other

affirmative sounds and words than the other researcher did as the respondent was answering the questions. There were also differences in the formatting of the transcript. For example, one researcher put the transcript in a table, while the other researcher put the transcript in a running text. The table format and the presence of small encouragements made it more difficult to select longer statements when coding the transcript. At times, this forces the researcher to think about what is the most significant part of the larger statement and only select that or even split the larger statement into multiple parts. It did also have the negative side effect of it being less appealing to select statements in the transcript of this format. While the researcher was aware of this while conducting the analysis and attempted to not let this negatively affect the coding, it could still have happened subconsciously. In that case it could mean that the findings are not as complete as they could have been if the transcript was formatted differently. It could also mean that these transcripts were unfairly underrepresented in the findings.

While the interviews were conducted and transcribed by two different researchers, the analysis was conducted by one of the two researchers. This researcher checked their interpretations with the other researcher, but it was not always possible to do this. This could lead to a limited understanding and interpretation of the transcripts made by the other researcher, which could in turn mean that the findings are based on incorrect interpretations of the things the interviewed teachers said in the interviews.

The analysis was done in a very limited amount of time. The time between the moment that the data collection concluded and the time the analysis was finished was less than a week. This was not a decision made by the researchers, but an inevitable situation caused by the availability of the last participant and the externally imposed deadline of the bachelor thesis. This could mean that the findings are not as complete as they could have been if the researcher had more time to conduct the analysis of the data collected for this study.

Future directions

Training beginning teachers in seating students is important to improve their confidence (Dicke et al., 2015). The findings of this replication strengthen the basis Hoekstra et al. (2023) made to inspire education for teachers. In order to let education for (future) teachers be inspired by these findings, it is necessary to conduct this study with access to more time and resources.

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