



## Student Digital Preferences in Higher Education before and during the Covid-19 Pandemic

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### Abstract

*This paper is an overview of a series of studies carried out in Norway and Sweden over a three-year period from 2019 to 2022. It introduces and compares research and results from before and during the Covid-19 pandemic and course design implications for after it. The main focus is student perceptions and experiences in blended and online learning. Data was collected at four main universities across Norway and Sweden. A mixed-methods approach was used across multiple case studies including Internet surveys, semi-structured interviews and focus groups. The research shows how students in blended and online courses perceive and prefer lectures, group work, assignments, oral and written feedback, and digital tools (Padlets, video lectures etc.) as methods of learning. The research is relevant in terms of mapping student perceptions and experiences in order to explore effective and responsive course design for higher education.*

**Keywords:** Student preferences, teacher training, digital learning, blended learning, online learning

This paper is an overview of a series of studies carried out in Norway and Sweden over a three-year period from 2019 to 2022. Informants come from four main groups of students taking English courses: pre-service trainee teachers, science majors, in-service teachers, and foundational-year English students. This paper looks at Study 2 and then considers if and how it correlates to the implications of Study 1 (see Table 1):

Table 1 Overview of Studies

Study	Description	Title
S1	Single case, mixed methods	Digital Student Preferences: a study of blended learning in Norwegian higher education (2020)
S2	Multiple case, mixed methods	Digital Course Design: A mixed-methods multiple case study of student perceptions and experiences
S3	Multiple case, mixed methods	Digital Course Design: A mixed-methods multiple case study of teacher perceptions and experiences

Study 1 (Haugestad and Keeling, 2020) was a single case study with 18 respondents and therefore of limited statistical significance. However, the generalizations in Table 2 were extracted from the data:

Table 2 Findings of Study 1

Implications	Components	Factors	Results
1. Teacher-centred practice	Synchronous lectures Teacher-led tasks in class	Asynchronous lectures Flexibility Control of classroom environment	Can be equally well delivered online
2. Student-centred collaboration	Student-led tasks in class Student-led assignments	Social relationships	Suffers due to lack of physical meetings

These generalizations can be tested using the larger sample in Study 2.

### 2 Method

Study 2 used an Internet survey anonymously collecting quantitative and qualitative data across three phases and sample groups (G1-3).



## 2.1 Sample

Table 3 outlines the differing samples in the various phases of data collection:

*Table 3 Phases of Data Collection and Groups (G1-3)*

Case	Respondents	Summary
G1	33	STEM students; campus-based CLIL English courses, became blended/online
G2	42	In-service teachers; blended English courses, became fully online
G3	132	pre-service teachers, in-service teachers, foundational-year English students; online English courses, some had campus days but primarily online only
<b>Total</b>	<b>207</b>	

## 2.2 Data collection

Data was collected in an anonymous *Survey Monkey* Internet survey. Q1-3 investigated teacher-centred practice while Q4-5 focused on student-led collaboration and practice after implications from Study 1. In addition, Q6-9 focused on digital components. Finally, Q10 was an open question which collected significant amounts of qualitative data from informants.

## 2.3 Data analysis

Cross-sectional quantitative data is represented in the left column of results summary tables. This gives a statistical indication of responses over the entire sample (207 respondents). Cross-sectional qualitative data is shown in the second column. This is primarily answers to the open question, Q10, which elicited a 63% response rate from the whole sample (135 responses). Comments under individual questions have been added under anecdotal in column 4. This includes significant bias in answers where respondents qualify their choice as being due to limited options etc. Finally, longitudinal quantitative and qualitative data analysis was conducted mapping out the three phases of data collection.

## 2.4 Ethical considerations

All data was collected anonymously. No individual IP addresses were stored or collected during the process. The entire process was registered with and approved by the Norwegian Center for Research Data (NSD).

## Results and Discussion

This section presents and discusses tabulated results summaries of Q1-9.

### Question 1 What setting do you prefer for lectures?

*Table 4 Results Summary Question 1 What setting do you prefer for lectures?*

Cross-sectional			
Quantitative	Qualitative (Q10)	Longitudinal	Anecdotal (Q1)
51% prefer online lectures	Synchronous lectures (10%) Lecturers (15%) Asynchronous lectures (10%)	G1 47% campus G2 67% campus G3 61% online	Prefer campus, chose online (4%) Flexibility (5%)

Half of the sample prefer the online classroom for lectures. The most significant factors found were, first, the importance of the lecturer in any equation; 15% percent of 135 answers rate this as the most significant factor. The individual lecturer is still the primary contributing factor to a successful course. Second, 10% replied synchronous and asynchronous lectures. This points to the quality of lecturing becoming increasingly important in digital environments. Moreover, lecturing, as a one-way communication of material from teacher to student, seems increasingly effective in digital environments. Asynchronous lectures are an important, complementary function to synchronous ones. They allow for different sequencing of material with the ability to watch and re-watch, fast forward and back, and take notes.

### Question 2 What setting do you prefer for in-class group work?

*Table 5 Results Summary Question 2 What setting do you prefer for in-class group work?*

Cross-sectional			
Quantitative	Qualitative (Q10)	Longitudinal	Anecdotal (Q2)



53% prefer campus for in-class group work	Breakouts (13%), of which negative (9%) Lack of contact (10%)	G1 50% campus G2 78% campus G3 47% online	Easier collaboration (3%)
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Over half the sample prefer the campus-based classroom for in-class group work. This would normally be under a teacher's direction as a form of student-led cooperative learning. Q10 points to Zoom breakout rooms being a significant factor with 13% citing them and 9% being openly negative. In addition, reports of lack student-to-student contact (10%) confirm that in-class group work is perceived to function best on campus. The second data group was particularly resistant to Zoom-based group work and more in favor of traditional receptive methods such as lecturing. That said, the largest group reversed the trend and favored the online classroom for in-class group work. This seems to qualify Study 1 in that traditional lecturing is favored online but teacher-led in-class tasks are preferred on campus. In two of the three data groups, however, the difference is marginal.

**Question 3 What setting did you receive most oral feedback from lecturers?**

*Table 6 Results Summary Question 3 What setting did you receive most oral feedback from lecturers?*

Cross-sectional			
Quantitative	Qualitative (Q10)	Longitudinal	Anecdotal (Q3)
42% more oral feedback from lecturers online*	Breakouts (7%), Lecturers (15%)	G1 42% campus G2 40% no diff G3 47% online	Online only bias* (2,5%) Chat function (1%) Oral feedback in breakouts

\*Note: 36% campus, 37% online 27% no difference

The fact that 42% of the sample responded that they received more oral feedback from lecturers online is highly surprising. This was in contrast to 31% for campus-based classrooms and 27% responding no difference. Several things need to be discussed in this case. First, the wording of the question – however it may have been explained by the researcher's introduction – does imply this should refer only to the course just taken and not in general, i.e. in your experience in any education. In the longitudinal data for group 2, 70% (9/13) of respondents answered that they only had online i.e. did not express a preference but just an actuality. They constitute nearly a quarter of group 2 (9/42) and therefore significantly bias both the group result and the overall result. A recalculation suggests 36% in favor of campus, 37% online and 27% no difference. Interestingly, the significant portion that see no difference may well suggest that oral feedback from lecturers is negligible at best; indeed, there is some anecdotal evidence to support this. Both Q3 comments and the Q10 open data point to the lecturer being the major contributing factor (15%) and soral feedback in breakout rooms to a lesser degree (7%). The chat function is a significant piece of anecdotal evidence that appears in Study 1 and all the data in Study 2. In sum, Q1-3 support the implication of Study 1 that teacher-centred practice can successfully be transposed to digital settings.

**Question 4 In what setting did you receive most oral feedback from students?**

*Table 7 Results Summary Question 4 In what setting did you receive most oral feedback from students?*

Cross-sectional			
Quantitative	Qualitative (Q10)	Longitudinal	Anecdotal (Q4)
41% more oral feedback from students online/campus*	Breakouts (13%) Group projects (10%) Lack of contact (10%)	G1 48% campus G2 50% online G3 49% online	Online only bias (3%)

\*Note: 44% campus, 40% online, 18% no diff

That 41% would answer for both online and campus-based for where they receive more oral feedback from other students is highly surprising. However, this result must be regarded as skewed (3%). It seems the group 2 responses are skewed in this way. The likely result it seems might mirror Q2 with a greater response in favor of campus. However, the swing would only be 1,5% in either direction and does not constitute a highly significant change. If we take this variance into account it produces 40% online. The result is still surprising and to some degree contradicts the implications of Study 1. However, this student-student exchange that was seen to suffer in Study 1, here clearly denotes both in-class and out-of-class interaction, or at least study group work in Zoom.

Contributing factors of statistical significance are Zoom-based breakout rooms as both positive and negative factors in terms of online study. In-class group work needs to be done in larger groups



and chunks of time. This in turn gives greater opportunities for student-to-student discussion and oral interaction. According to the data, when group work is effective online it can be a significant positive. Group projects were cited by 10% as a major factor and clearly increase oral feedback among students. It is clear these are a factor even though nearly all of the course events were online. At the same time, lack of contact is reported by another 10% indicating it is a contributing factor for respondents preferring campus-based group work and activities.

**Question 5 What setting do you prefer for group work out of the classroom?**

*Table 8 Results Summary Q5 What setting do you prefer for group work out of the classroom?*

Cross-sectional				
Quantitative		Qualitative (Q10)	Longitudinal	Anecdotal (Q5)
80% prefer physical component (50% mix)		Group projects (10%) Lack of contact (10%) Flexibility (8%)	G1 55/27% mix/campus G2 53/43% mix/campus G3 22% online	increased effectiveness physical and online (4%)

Where Q2 indicated a preference for the campus-based classroom for in-class group work, Q5 points to the fact that a physical component is even more critical for project work and out-of-class collaboration. Eighty percent prefer some physical meeting for successful collaboration. This rises to 95% in phase 2 data collection. This is one critical area of study that must be considered for successful digital course design. One factor clearly affecting this in the open Q10 data is group projects (10%) which is a critical component in any course. The 10% who report lack of contact suffer in this arena. The 50% who favor a mix of environments correspond with the 8% that give flexibility as an important factor in course evaluation. While group 3 in the longitudinal breakdown show a more favorable response to online out-of-class group work, they still show a 74% preference for a physical component. In sum, this strongly supports the implication of Study 1 that student-centred collaboration and practice suffers significantly in digital settings.

**Question 6 How useful were the recorded lectures?**

*Table 9 Results Summary Question 6 How useful were the recorded lectures?*

Cross-sectional				
Quantitative		Qualitative (Q10)	Longitudinal	Anecdotal (Q6)
75% find useful (50% very)*		Asynchronous lectures (10%) Flexibility (8%)	G1 70% useful/very G2 72% useful/very G3 80/52% useful/very	Re-watching (4%) Note-taking

\*Note: 97% positive in courses where used

This result is out of the total sample of which nearly a quarter (23%) did not have asynchronous video lectures. The actual result of those who had them is 97% positive. It is clear that asynchronous video lectures are a highly valued offer in course design. Ten percent of open answers in Q10 stated they were among the most significant factors in positive course reception for students. The comments in Q6 highlight re-watching and note-taking as reasons for their value among students. Flexibility is a second clear factor as asynchronous lectures allow students not to miss out on course lectures and/or structure their study more efficiently.

**Question 7 How useful were the padlets?**

*Table 10 Results Summary Q7 How useful were the padlets?*

Cross-sectional				
Quantitative		Qualitative (Q10)	Longitudinal	Anecdotal (Q7)
Padlet use increasing; 75% find useful*		Padlets (4%)	G1 78% G2 86% G3 73%	High response rate in comments (17%) Familiarity/functionality (3,5%)

Note: 88% (154/175) positive in courses where used

Padlets are becoming more widely used and accepted in educational settings; indeed, 85% of the sample used padlets in their courses. Overall they are found useful or very useful by 75% of the total sample and 88% in courses where used. Moreover, 4% of the Q10 responses mention padlets as a most significant factor. This is clearly not as high as asynchronous video lectures, but still constitutes a significant result. Moreover, it is clear that padlets are an emotive subject. They elicited a higher





response rate in comments than any other question (17%). Challenges in terms of familiarity and functionality dominate the early phase data but then disappear in phase 3. This suggests more widespread use and acceptance of the format through increasing familiarity.

**Question 8 How educational was the multimedia project (podcast/video)?**

Table 11 Results Summary Q8 How educational was the multimedia project (podcast/video)?

Cross-sectional					
Quantitative		Qualitative (Q9)		Longitudinal	Anecdotal (Q8)
93%	find educational where used	Group projects (10%)		G1 85% G2 69% none G3 54/46% positive/none	Lack of technical difficulty comments

In the courses where a multimedia project was used the response was highly positive (93%). It seems clear that group projects are a popular and significant factor (10%) in this positive response. Moreover, a total absence of comments regarding technical difficulty in the comments in Q8 is an unexpected outcome.

**Question 9 What course components would you keep given a choice?**

Table 12 Results Summary Question 9 What course components would you keep given a choice?

Cross-sectional					
Quantitative		Qualitative (Q10)		Longitudinal	Anecdotal (Q9)
Receptive preferred productive presentation least.	components (63%), less, oral	Synchronous lectures (9%) Asynchronous lectures (9%) Group projects (10%)		G1 writing/multimedia 67% G2 synchronous lectures, oral 38% G3 receptive 67%	None

Receptive components (63%) are preferred in course design by the sample. Productive tasks are less positively received and oral presentations receive the lowest number of responses. The Q10 data indicates synchronous (9%) and asynchronous lectures as significant factors in course evaluations receiving positive responses. While group projects also receive support (10%) as a particularly rewarding component for students, oral presentations are least liked. One group to reverse this trend to some degree is the group 2 in-service teachers who gave oral presentation 38%, its highest positive response.

**Conclusion**

**Teacher-centred practice (Q1-3)**

Study 2 confirms the general implication of Study 1 while adding nuance. Teacher-centred practice is divided into three areas: lecturing, teacher-led in-class group work and oral feedback. Overall, the sample perceives little difference and slightly favors online settings. In-class group work is shown to be preferred in campus-based settings. However, in terms of lecturing and oral feedback little difference is perceived and the online classroom slightly favored. The lecturer is the most prominent qualitative factor.

**Student-centred collaboration (Q4-5)**

Study 2 suggests that some kind of physical component is necessary for success, even in online courses, when considering student-led collaboration. Familiarity with and working in digital spaces has become increasingly accepted and effective with respondents reporting little or no loss of oral feedback from other students. However, this remains the component of courses where students report suffering from lack of contact and struggling in terms of effective collaboration.

**Digital components (Q6-9)**

Of the digital course components asked about in the survey, asynchronous lectures were decisive. They are a significant contributing factor to the overall positive response to teacher-centred practice in online settings. Moreover, they comprise a significant percentage of the receptive course components preferred by the total sample.

**References**

[1] Haugestad, A. & Keeling, C. (2020) Digital Student Preferences: a study of blended learning in Norwegian higher education. *Nordic Journal for Modern Language Methodology*, 6 (3).