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# The adaptive learning platform that wasn't adopted: A socio-technical case of mechanisms of non-use

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## Abstract

Adaptive and personalizing technologies are increasingly integrated into the EdTech sector, promising enhanced and expedited learning outcomes. This article examines the final phase of a project involving 536 students and 8 educators at a nursing education programme who incorporated an adaptive learning platform. The change theory suggested that students would quickly acquire rote skills and generate data to aid targeted instruction. However, participation was lower than expected, with both students and educators facing challenges. Using the social

construction of technology (SCOT) framework, we explore the socio-technical mechanisms influencing rejecting and resisting mechanisms of non-use.

**Keywords:** adaptive learning, non-use, social construction of technology, technology integration

# Introduction

Adaptive learning technology engages with several contemporary technological developments and challenges in the education sector such as differentiation and personalization through artificial intelligence and algorithms (Fontaine et al., 2019), data for learning analytics (Adam et al., 2018) and outsourcing certain teaching tasks to technology (Selwyn, 2019). Simultaneously, a growing body of research shows that digital technologies and intelligent platforms increasingly shape the distribution of work (Selwyn, 2021), roles (Andersen, 2022), and educational practices (Cone, 2023a), — sometimes in intended and beneficial ways, other times in unintended and problematic ones.

The case presented in this study reports findings from a project that sought to enhance nursing education in Denmark by implementing an adaptive learning platform designed to increase learning efficiency and free up time for clinical training. Yet, as technology philosopher Langdon Winner reminds us, we often only recognize the implications of new technologies after we have committed to them: 'Only later does the broader significance of the choice become clear, typically as a series of surprising 'side effects' or 'secondary consequences.' (2010, p. 9).

This article methodically explores the socio-technical mechanisms that contributed to the divergence between the project's initial change theory and the actual outcomes associated with the implementation of the adaptive platform. When we refer to the socio-technical mechanisms, it is to point out the co-constitutive processes that mutually shape users and technology—processes that both enable and constrain action (Oudshoorn & Pinch, 2003b). The research question we set forth to answer is: What socio-technical mechanisms involving students and educators contributed to the adaptive learning platform being used differently than originally anticipated?

The article proceeds as follows. We begin by presenting the empirical case that forms the basis of our analysis. Next, we introduce our theoretical approach, drawing on the social construction of technology (SCOT) framework, with particular emphasis on the conceptual distinctions between different forms of non-use. This framework guides our analysis of the socio-technical mechanisms at play, allowing us to classify students and educators into various categories of non-users of the adaptive platform.

# The case of NurseEd and its theory of change

The NurseEd project (2020-2024) aimed to address challenges in Danish nursing education by personalizing the curriculum and improving learning efficiency through the adaptive learning platform, Area9 Rhapsode™. The platform replaced traditional textbooks, offering dynamic, tailored content based on student responses. In NurseEd, students interacted with digital content by answering questions and rating their confidence. The algorithm adapted the learning path based on both correctness and confidence, enabling individualized progression. Educators received analytics as students prepare before class, which they used to adjust teaching to students' varying levels of understanding.

The goal was to free up classroom time for clinical skills practice while providing data for educators to adjust their teaching through various instructional designs (Jørnø et al., 2022). Despite these aims, the platform's usage was lower than expected. By the final iteration in 2023, 74% of students completed only half or less of the assigned readings on the platform, and 25% did

not use the platform at all. This article focuses on the unexpected reasons behind these low engagement rates.

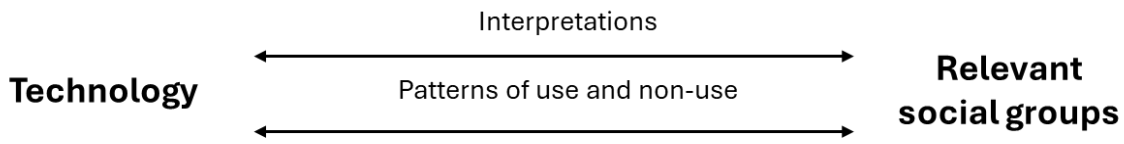
The project was organized as a design-based research project spanning three years. Starting with 2 educators developing the curriculum and refining the platform, and by the last iteration, a total of 8 educators and 536 students were enlisted to use the platform across two campuses in the autumn of 2023. In this article, we report on data from this period. The project had two research work packages. The authors of this article were responsible for the qualitative accompanying research, which aimed to explore and shed light on the experiences of students and educators throughout the project. The second work package had a quantitative focus on impact measurement (Tretow-Fish et al., 2023, 2024). However, the purpose of this article is to shed light on the unexpected and unforeseen reasons behind the non-use which did not align with the expectations outlined above.

# Socio-technical mechanisms and types of non-users

Recent research has highlighted how digital platforms, their infrastructure, and underlying logics challenge subject positions, teaching practices, and educational policy in new, unforeseen ways (Banoy et al., 2024; Cone, 2023b). Many of these studies are draw on a posthuman and critical approach, broadly situated within the field of Science and Technology Studies (STS). As Sergio Sismondo notes in his historical account of STS (2011), many of the newer strands – e.g., actor-network theory and feminist epistemologies – are rooted in the social construction of technology (SCOT). Although this perspective has been critiqued and expanded in many directions, in this article, we return to its foundational ideas and base our approach on SCOT. As Basu (2023) has pointed out, SCOT remains relevant and offers a conceptual framework well-suited for analysing specific technologies in specific contexts, focusing on how different groups construct a technology – and how the technology, in turn, constructs the group.

The Social Construction of Technology (SCOT) is a theoretical framework used to understand how technologies are developed and shaped through social processes. It highlights the intrinsic connection between the social and technological domains. SCOT posits that technology is not merely the result of technical advancements but is fundamentally shaped by interactions, power relations and negotiations (T. Pinch, 2009). In this article, we focus on the relationships between interpretations of the adaptive learning platforms and patterns of use among different groups. These relationships are visually represented in Figure 1.

**Figure 1:**




*The constitutive elements of socio-technical mechanisms. Socio-technical mechanisms are shaped through ongoing exchanges between technology and social groups, involving interpretation and use/non-use.*

The purpose, value, functionality and appearance of a technology is socially negotiated because technologies are subject to *interpretative flexibility.* Different groups often hold different perspectives, practices, and expectations toward a technology. Technologies are subject to competing interpretations in their early stages of development and implementation, but over time, debates close and a particular understanding tends to stabilize. The *socially relevant groups* differ in their patterns of use and interpretations. It is is defined by the fact that its members share a common set of opinions about a specific artifact, and a group acquire an identity and attitude by relating to the technology (T. J. Pinch & Bijker, 1984, p. 414). Within research of technology integration in education, students and educators are often considered the a priori relevant groups. Rather than focusing solely on predefined roles such as 'educators' or 'students', we analyse patterns of use and non-use across informant groups using a typology. In the book *How Users Matter* (Oudshoorn & Pinch, 2003a), particular attention is to cast nuance to the concept of 'use' related to technology. Rather than treating use/non-use as a binary, Sally Wyatt (2003) emphasizes that there are varying degrees, forms, and motivations behind (non-)use. Inspired by this, we use the concept of non-use*,* which implies that something has fallen out of practice, been neglected, or become obsolete due to being unused. Wyatt argues that non-users should not simply be seen as 'dropouts' who fail to understand the benefits of technology. Rather, non-use can be a deliberate and meaningful choice. She develops a typology of kinds of non-users, that includes *resisters*, *rejectors*, *excluded* and *expelled* (Wyatt, 2003, p. 76). In the context of this study, we focus on the first two as no one were excluded or expelled within the project. Both resisters and rejectors have actively chosen not to use a particular technology, even though it is available and prevalent in their context. However, they have different motives and trajectories:

- *Rejectors* have first-hand experience with the technology and may accept the core premises, but gradually withdraws from using it. Rejectors may consciously opt out of technology and seek alternative solutions or lifestyle patterns that do not depend on the said technology.

  *Resisters* more actively avoid the particular technology, because it does not align with their practices and actions. This may be due to personal preferences, ethical considerations, or a lack of interest or need for the technology. They also more actively oppose the technology and delay its adoption (Ibid.).

In SCOT, the groups of non-users are not passive recipients of technology but are rather active agents involved in the construction and negotiations surrounding technological development and integration. Thus, we do not view barriers as either purely technological or human, but rather as co-constituted mechanisms. Different groups of non-users are characterized by distinct different socio-technical explanations for their actions and attitudes. We define a socio-technical mechanism as the dynamic interplay between social and technical systems within an organizational context. These mechanisms explain how such interplays affect the adoption and functioning of technologies.

# Materials and methods

The empirical data is gathered through a sequential research design. By this, we mean successive data collections, where the purpose of the preceding collection is to qualify the subsequent one (Cameron, 2009). This is particularly relevant in a study like this, where we examine which socio-technical mechanisms can explain different forms of non-use. One group of informants — e.g. educators — may point to explanations referring to students, making it appropriate to follow up with data collection among them.

**Table 1:**
*Steps in data collection with their methods, sample and approach to analysis*

| Sequence step | Methods for data collection | Approach to data analysis |
|---|---|---|
| 1: Screening interview among all educators (n=8). | As outlined above, the project relied on a theory of change. The planned intervention was intended to modify teaching practices across a range of parameters, which inspired the content of a structured interview guide in the first data collection. We thus inquired whether the educators 1) had selected specific learning objectives in the e-book, 2) communicated that the students should prepare before the deadline, 3) whether they had familiarized themselves with the data before teaching, and 4) created a link between the data and their teaching activities. In addition, we presented them with four statements from which they were to choose the one that best described their practice, indicating the extent to which technology has transformed their practice. The interviews were conducted online with a duration of approx. 30 minutes. | All interviews have been qualitatively coded in the software Nvivo, using a combined deductive and inductive strategy (Brandi & Sprogøe, 2019). The inductive strategy involved identifying all statements that could help answer the question of why their practice with the platform had the characteristics it did. This led to a preliminary list of 17 codes. Beyond that we coded statements that indicated the level of which the technology has transformed their practice. |

| | | |
|---|---|---|
| 2: Telephone survey among students (n=234) | As the analysis below also shows, insufficient data from student preparation was one of the explanations educators gave for non-use. This prompted us to ask the students for explanations as to why they opted out of using the platform. From previous iterations, we have learned that this group of informants can be challenging to recruit for data collections, especially non-users. With assistance from a consulting firm, we therefore conducted a survey via telephone calls across the population (N=536), achieving a response rate of 43 pct. The questionnaire was structured with initial questions about background, self-assessed level of preparation, and satisfaction with education. It then included 11 questions that we know from a previous studies can explain potential non-use (Gissel et al., 2021; Nortvig et al., 2022). Among other things, respondents were asked whether they agreed or disagreed with statements such as: "I find that the platform adapts", "it is difficult to find content", "the amount of content is too large", "I get a feeling of being monitored". Additionally, they | The students participating in the data collection were spread across two campuses and between the 1st and 5th semesters of their education. The incoming responses have been weighted so that the frequencies are representative of campuses and semesters. In the following analysis, we report the results as descriptive statistics, and we only identify a relevant socio-technical mechanism from the students' perspective when 25 pct. or more of the participating students have indicated it as an explanation or view. |

| Sequence step | Methods for data collection | Approach to data analysis |
|---|---|---|
| | were asked whether they would recommend the platform (yes/no) and to qualitatively provide an explanation for their choice. | |
| 3: Follow-up interviews among selected educators and students (n=6) | Following the two previous data collections, we selected three educators and three students who varied in their explanations for non-use. We conducted semi-structured interviews aimed at clarifying e.g. what 'not enough data' meant to them, and why do they experience loss of autonomy. In addition, we presented them with statements to which they were to respond in terms of values, such as 'the platform's learning philosophy does not align with my own'. The interviews were conducted online and lasted approx. 30 minutes. | The interviews have been coded inductively with the aim of identifying new explanations and mechanisms underlying non-use. |

We present the identified patterns of non-use through argument maps, which visualize how different premises lead to distinct conclusions across user groups. Unlike mind maps, argument maps clarify the logical structure of reasoning behind each position (Davies, 2011).

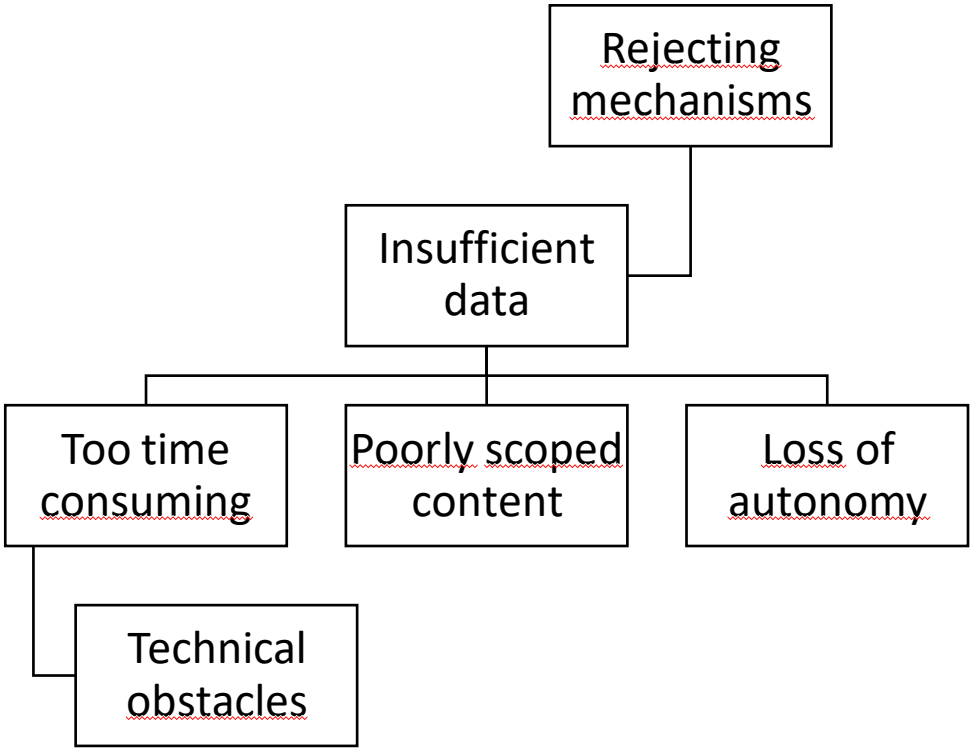
# Results

In the following, we present the different groups of non-users, along with the socio-technical mechanisms and explanations that underlie their attitudes and practices. As will be apparent from the analysis, students and educators help to construct the technology as something that, for various reasons, partially or not at all fits into their practices. But importantly, technology also helps to construct the groups as entities with different values, expectations, and ideals.

# Rejecting mechanisms

A group of the informants among students as well as educators falls into the rejecting group. They have a diverse range of arguments on why they have decided to stop or limit using the program after trying it out. The reasons why rejecting educators and students discontinued use of the platform generally cluster around five main themes, with insufficient data emerging as the central mechanism. However, the reasons for why data generated from the platform is insufficient are various, as depicted in figure 2.

**Figure 2:**




*Argument tree for rejecting mechanisms across students and educators*

## Insufficient data

As highlighted in the case introduction, generating data from student preparation was a key element of the theory of change, as educators were expected to use this data as a foundation for planning their teaching. The first and most prevalent explanation for why this practice fails, reported from all eight educators, is: 'Not enough data'. Some educators may still formally access the platform and review the data out of obligation, but mentally, they have disengaged from the platform. One describes the gradual process towards becoming a non-user:

> 'If I have the time, I do check up on data, but I do not prioritize it very much as it's my experience that when only 6-7 students are using it, the others do not jump in again.' (educator)

A common remark is the clear recognition that students are not using the platform: 'They do not use it. So I am not able to plan specific things from it [the data].' But what constitutes 'enough

data' from an educator's perspective is not clearly defined and is left to themselves to decide. There are three main positions. The first position is a minimalist, taken by a single educator, who emphasizes that if just one student has prepared using the platform, this should be recognized, and therefore this position uses this data, fully aware that the uncertainty of it reflecting the class as a whole is high. The second position—the rigorous—draws on scientific standards of representativeness and remains uncertain unless nearly all students have completed their preparation and generated data . The third position is the intuitive, which represents the majority of educators. They base their practice on intuition, estimating that roughly half of the students should have completed the preparation. One says: 'I would probably think it would be around half. Just so that there is some form of data on half of them. It doesn't need to be any specific students.' As mentioned at the outset, 74% of the students completed half or less of the preparation, and with educators' rigorous and intuitive construction of the concept of 'enough data', this means that they reject the technology because of insufficient data.

## Too time consuming

A concern becomes, why students don't use the platform for preparation. Among the students, 64 pct. disagree that the platform shortens their study time. Rather, they find the study method too time consuming. A major factor related to time concerns how the learning path is constructed according to the principles of mastery learning. After reading a 1-2 page section, users must answer a small series of questions related to the content. If they answer incorrectly, they are redirected to the same text again and cannot proceed to the next section until all questions are answered correctly. One student comments on that: 'I am not using it anymore; it takes too long time.' The perception that it is a too time-consuming way to study reflects that the group more often thinks of preparation as something to be completed rather than engaging with materials until mastery is achieved. In this way, the platform reinforces the perception of students as having limited patience, by repeatedly demanding sustained attention and persistence.

Among educators, time is also of the essence. They report not having enough preparation time to adapt their teaching based on the data they receive, if any at all. Often, student data arrives too late, after lessons have already been planned, as the educators sometimes need to prepare several days or even weeks in advance due to their busy schedules. One educator explained: 'Sometimes I have to prepare several days ahead because I have other assignments as well. Data is not what dictates my planning, but it serves as a sanity check for me.' Those who oppose using data in their teaching feel that the allocation of preparation time fails to accommodate the integration of such data. They review the data out of duty but ultimately find it unusable. With regards to time consumption, the platform The platform constructs rejectors—both students and educators—as individuals who are time-conscious and hold clear preferences about how their time should be spent. The platform comes with a promise of efficiency, but this concerns deep learning and targeted preparation, rather than time-optimizing teaching and learning. As a result, when the platform demands sustained attention, it violates users' expectations and contributes to its eventual rejection.

## Technical obstacles

Technical difficulties were a significant reason students stopped using the platform. Issues included slow loading times, poor navigation, and lack of integration with other study apps. In the survey, 52% of students reported slow system response, coining the term "chopping" to describe

the delay. Additionally, students found the platform unstructured and confusing, with limited accessibility features like a missing speaker function for test questions. Educators, however, did not report significant technical issues, though they noted their version of the platform was simpler to navigate than the students'.

## Poorly scoped content

The nature of the content presented is another reason for rejection. Students and educators seem to agree upon an experience of poorly scoped and insufficient content in the platform. The texts are perceived as unpedagogical, overly medical, and filled with unfamiliar terminology that is not explained, suggesting that the content is aimed at the wrong user group. The text is a mismatch to curriculum as the content does not always match exam subjects and not always the semester level:

> 'The material in Rhapsode is so fundamentally different than what we are used to. Either the level is too high or it's too low. Several among us [educators] had to sort among the presented learning objectives and opt out some. We cannot use those, as it is not part of the nursing education.' (educator)

What is clearly evident here is that educators and students are not merely agents of the transmission of digitally embedded curriculum. Subject knowledge is intimately connected with attitudes towards criteria for relevance and depth. The platform and its content become a catalyst for precisely such positions and rejecting practices.

Among students, rejecting the platform does not mean rejecting their education, as students who have abandoned using the platform for class preparation report a very high attendance rate, with 91 pct. attending to a high degree and the remaining 9 pct. attending to some degree. 67 pct. of the students do not find the academic level too high, however, only 9 pct. of them found that the platform made the teaching sessions more relevant while they were still using the platform. The platform fails to add perceived value to teaching, as reflected in low relevance and weak integration with classroom activities.

## Loss of autonomy

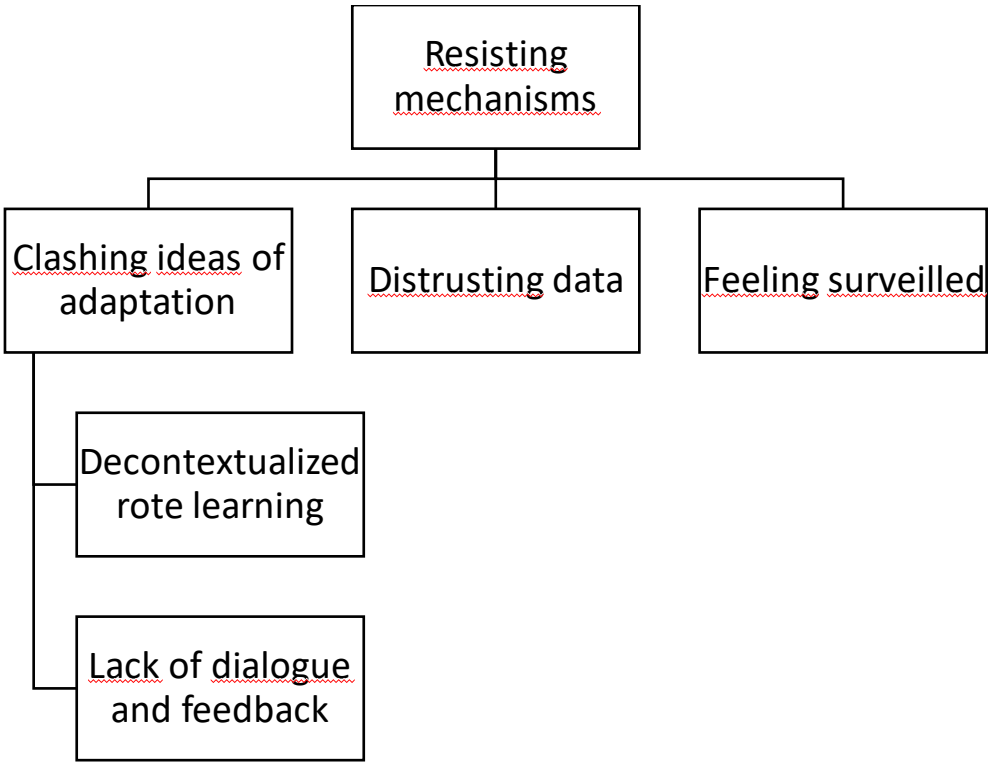
Students experienced the platform's quiz-based design as disruptive and time-consuming, as repeated incorrect answers interrupted their study flow (see section on time consumption). Many preferred to quickly skim through the material before class and felt the platform took away their autonomy by requiring them to engage more deeply with content than they intended. For weaker students, this process was particularly frustrating and demotivating. As one student expressed, 'It's an irritating program because you cannot move on if you have difficulty in answering correctly.' The rigid feedback loop limited students' ability to control their own learning pace, resulting in a sense of lost autonomy—particularly among those who struggled academically.

# Resisting mechanisms

Resisters are those who actively choose not to use the technology, despite its availability. The resistance stems from a mismatch between the platform's learning principles and the users' pedagogical values, leading many to resist it as misaligned with their educational approach. Although it was a policy that educators had to use it, some were very reluctant. Among students,

as mentioned, 25 pct. have not even logged into the system at all despite being heavily encouraged to do so. Below is the argument tree for resisting mechanisms.

**Figure 3:**




*Argument tree for resisting mechanisms across students and educators*

## Clashing ideas of adaptation

The platform is introduced as an adaptive technology. But already as this point, a deal breaker emerges. What the adaptation concept entails is a source of much disagreement and confusion. When educators and students experience a discrepancy between their own understanding of adaptivity and that of the platform, it results in a resisting practice. 25 pct. of the students state that they don't experience any adaptivity within the platform. Educators particularly point out challenges with the concept of adaptation:

> 'There is a huge divergence between presenting it as an adaptive learning tool. But it's not adaptive at all [*laughs*]. That's why it's difficult to make significant didactic changes, because it's not adaptive as it should be.' (educator)

Technically, the system adapts to two things: whether the student has answered correctly or incorrectly, and how self-confident they are. When the student answers correctly and is self-confident, they are no longer exposed to that question and the corresponding reading material. However, students and educators approach the platform with the expectation that it adapts to the student's academic level. If something is too challenging, it should 'adjust to the student's zone of proximal development', as an educator expresses. Another expectation is that it adapts to different learning styles with various modalities: 'If Rhapsode [the platform] could sense that the student was more visually oriented, it would provide more images and videos to explain instead of text. It doesn't do that.' (educator). Through their experience with the platform, educators

recognize that they construct a particular understanding of what meaningful adaptation entails in a pedagogical context—and when this construction clashes with that embedded in the platform, they resist its use.

## Decontextualized rote learning

The reason why educators prefer certain forms of adaptivity has to do with the fact that, for them, learning and knowledge need to be contextualized to make sense – in relation to the students' prerequisites and the clinical practice for which the students are being trained. However, the platform has an explicit focus on rote learning[1], and it is therefore designed not to present knowledge in relation to the context in which it will be applied. However, this premise of decontextualized knowledge acquisition conflicts with several educators and students. One educator put herself in the position of a student to explain the problem:

> 'So, I think that sometimes the questions are taken out of context. The ones they get. Not all of them. But they might think, "Why on earth is it asking about this?". Whether it's because they don't understand it or not, I don't know. I can't follow up on that.' (educator).

Another educator also touches upon rote learning as the opposite to his learning approach and compares the platform with an online fire safety course: 'It also applies to an online fire safety course. It's limited in technique. It can do a lot of things in a different way, but it's limited'. The comparison with an online safety course highlights according to his opinion the platform's limitations in learning within more complex contexts, where there is also room for nuances and a need to discuss perspectives.

Students also highlight on the issue of decontextualised knowledge acquisition through the platform:

> 'You answer a question and don't get anything out of it, you don't learn properly from it, you get a chapter ahead in the program which in turn is the same chapter you still go through in the classroom' (student).

Another student expresses it differently by arguing that focus is incorrectly placed on right or wrong instead of focusing on learning: 'Feels like a strange program. You're forced to find answers to wrong questions and it becomes the focus instead of focusing on learning'. Context is a key factor in the resisters' concerns because it significantly influences how students understand and learn.

Likewise do the students also express a critique of the platform's right and wrong method: 'You answer a question and don't get anything out of it, you don't learn properly from it.' Another student expresses it differently by arguing that focus is incorrectly placed on right or wrong instead of focusing on learning: 'They [the platform] think that it's just about remembering that specific answer. But then they lose the link to the context of that answer.' An educator explains that students might answer correctly in the platform but struggle to apply the knowledge they supposedly acquired to a case or practical task in class. Context is a key factor in the resisters'

[1] Rote learning is a memorization technique based on repetition, aiming to enhance recall through repeated exposure to the same material.

concerns because it significantly influences how students understand and learn. They criticize the platform for not considering the context in which students are studying.

## Lack of dialogue and feedback

Another source of conflicting ideas about adaptation concerns the role of dialogue and feedback in learning. One educator argues that the platform neglects several key elements typically emphasized in learning theory—especially feedback: 'Good feedback must be provided. Feedback up, and forward, as John Hattie has explained many times'. The importance of feedback in a learning context and the need for the students to reflect upon what they learn with someone else is highly valued among the educators. When working in the platform, students do not have a study partner to collaborate with. It is necessary for students to prepare individually; otherwise, it corrupts the data in the platform. Furthermore, the user interface is by no means created with group work or social interaction in mind. In the survey, 44 pct. of students indicated that they are neutral on the question of whether they prefer to study collectively or individually, but there are also 33% who prefer to do it collaboratively. On this, students elaborate: 'We have developed our own way of preparing. In my study group, we divide the assignments among us, so it is difficult for us as a group to start using it.'. The individualization of learning conflicts with beliefs and ideas among both students and educators, and explicitly the educators encourage students to collaborate and engage in study groups, and interpret the individualistic affordances of the platform problematic in that regard:

> '[In the platform] students work on tasks without conversing with anyone. They receive no answers or feedback on what immediately arises in their minds. If they could, they could correct a lot in a very short time.' (educator)

In summary, resisting mechanisms involve different perceptions of adaptation. This includes what good learning should adapt to, as well as how this adaptation should occur – for example, through contextualization and social interaction.

## Distrusting data

The data collected and presented for educators through dashboards in their preparation by the platform also revolves around the two variables the system adapts to: whether the students can answer correctly or incorrectly, and the students' self-reported confidence in their answers. However, among resisters, there is widespread distrust regarding whether the system truly measures what it claims to. The resisters have not only given up on expecting any data but some are also reluctant to trust in them. Some of them feel that data points in all directions:

> 'But often I don't think that I have that much data. When I have a little data, and I think "Maybe I could analyze this" then it points in all directions […]. In that way, I don't think that I can use it actively to change my teaching plans.' (educator)

One educator recalls creating small quizzes in Kahoot to verify whether the platform's data aligned with his own assessments. This distrust stems from a lack of transparency in what data is collected, how it is processed, and presented in the dashboard. Even if they do trust the analytics, they are skeptical about the relevance of these variables for gaining valuable insights. One educator notes that the platform cannot reveal why students respond in certain ways, making it

impossible to identify the underlying causes of learning misunderstandings based solely on the data:

> 'I do not find the underlying cause of a learning misunderstanding in the student because they have answered incorrectly or correctly in Rhapsode. You need to use some tools, theoretical tools, for that. That's what I believe.' (educator)

Furthermore, a distinction emerges between the pedagogical value of students' self-reported challenges and the challenges identified by the platform's measurements. The educator emphasizes that the self-reported experience always takes precedence because it creates meaningful teaching:

> 'I ask: "What has been challenging today, what was difficult at home, what should we review today?" From there, I get 19 responses, but I can condense the meaning from them and form themes that we address.' (educator)

From this educator's perspective, student experiences form the basis of meaningful teaching and should not be overridden by platform-generated data. Instead, pedagogical insight emerges through dialogue, not algorithmic outputs.

## Feeling surveilled

Among the students, 25 pct. resist the platform because they feel surveilled. A core principle of the platform is the collection of individual student data to enable tailored instruction. However, this approach is met with opposition by the students as they perceive preparation to be a private matter. Knowing that educators can see their level of preparedness, what they struggle with, and how confident they are becomes a reason to resist the platform. One student explains it this way: 'I think it becomes a way to check if we are doing our homework or not.'. Thus, the understanding of the platform's purpose shifts from being about learning and immersion to becoming a means of control. This significant group of resisters avoids using the platform due to a fundamental disagreement with its embedded pedagogical approach. They justify their resistance by questioning the platform's underlying rationale, which they perceive as restricting both meaningful learning and students' sense of autonomy.

# Concluding discussion

This study has shown how an adaptive learning platform intended to enhance nursing education instead contributed to the emergence of two distinct types of non-users among educators an: rejectors and resisters. Through a SCOT lens, we can understand these non-use patterns not as simple failures of implementation but more importantly the socially and technically co-constituted reasons behind.

Interpretative flexibility played a central role in the project's outcome. Educators and students interpreted the core features of the platform—such as adaptivity, feedback, and data use—in divergent ways. What the designers viewed as helpful personalization, students saw as surveillance and educators as unnecessary complexity. These conflicting interpretations illustrate how the meaning of a technology is not fixed but socially negotiated.

Relevant social groups, in this case resisters and rejectors found among both students and educators actively shaped and were shaped by the platform. Their shared experiences, pedagogical values, and expectations formed the basis for their positioning toward the technology. These groups did not passively receive the platform but responded in ways that redefined its role and relevance within their learning and teaching practices. Some educators saw it as incompatible with meaningful pedagogical work; others among both students and educators simply as unhelpful or misaligned with practical routines.

The emergence of resistance and rejection can also be seen as contributing to the stabilization of non-use. Rather than arriving at a shared, stable use of the platform's role in education, both educators and students enacted rhetorical and practical closures that excluded the platform from daily practice. For instance, educators justified non-use by emphasizing insufficient data, while students questioned the platform's pedagogical legitimacy and practical value. These strategies led to the stabilization of non-use as a viable and justified position.

Furthermore, our findings expand the SCOT framework by integrating the concept of non-use as a dynamic and meaningful form of engagement. Non-use is not the absence of interaction but a result of socio-technical negotiations shaped by expectations, routines, values, and perceived affordances. As such, non-use reflects ongoing attempts to define what technology should do, for whom, and under what conditions.

In conclusion, this case challenges deterministic views of educational technology integration. The fate of the adaptive platform was not determined by its technical capacities alone but by how well it aligned with the socially situated practices and beliefs of its users. SCOT provides a powerful lens to understand these dynamics, showing that educational technologies must be responsive not only to pedagogical aims but to the plural and evolving meanings constructed by their users. Future technology implementations in education should anticipate such interpretative struggles and actively engage with users in shaping not just how the technology functions—but what it is understood to be.

# Declaration of interest

The authors declare no conflict of interest regarding the publication of this article.

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