



Digital School Mapping in the Municipality of Pristina through Focus Groups

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Disclaimer

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INTRODUCTION

It is generally recognized that digital integration in the education system is a valuable asset for teachers and students. The use of quality equipment such as computers, tablets, projectors, televisions, etc., can make the learning process easier and also directly affect the preparation of students to pursue more profitable careers and for an ever more digital future.

Technology has opened up new learning opportunities, thus increasing the effectiveness of teaching and learning. The Internet has provided students with access to a variety of information and resources from all over the world, through which it encourages them to enhance their research skills. Another important advantage of using technology in schools are virtual labs, or different games to understand different concepts in certain classes, which enhance the learning experience by making it more interactive (Haleem A., et al, 2022). In addition, technology provided students with new opportunities to collaborate and communicate, working together on various project assignments regardless of their location. On the other hand, technology has made it easier for teachers to manage their classes through use of digital tools such as online materials or books, to evaluate and grade, to maintain records of student participation in class, to monitor their progress, etc., which saves them time and makes the learning process more efficient (Camilleri, M.A., Camilleri, A.C., 2017).

However, the education system in Kosovo generally relies on traditional learning, with limited integration of technology (IKP) (2020a) - and schools still continue to report an insufficient number of computer labs and limited internet connectivity in their schools. Nevertheless, despite the difficulties, the teachers considered that online learning served not only the purpose of the emergency situation with the closing of schools, but also their experience during that time served as a positive note in their attitudes regarding the integration of the digital component in their traditional teaching system (Morina M. et al, 2020).

Today, it is especially important to ensure that all teachers and students have equal access to the internet and digital devices, while ensuring the development of the necessary skills so that they can take advantage of the many benefits that technology offers. Hence, this study was carried out in order to understand the perceptions on the readiness and preparation of teachers, students, parents and school principals themselves to pass or overcome in a more digitized learning process.

In the first part of the analysis in this report are presented the findings and thematic analysis, followed by the main conclusions, implications and recommendations for further studies. Considering that the study is entirely based on data from focus groups during the analysis, the limitations of the qualitative type of research are taken into account.

METHODOLOGY

Method

The research instrument for this study was chosen to be focus groups with teachers, students, parents, and pre-university level directors. The focus groups were conducted physically with the respective school representatives selected through a two-step cluster sampling method, the first cluster being based on classes or school level, and the second cluster being random - school, location, number of students. Thematic analysis was used for data analysis on the common themes that emerged from the focus groups. All themes provide answers to the research objective of this investigation, namely measuring the perceived readiness of students, teachers, and parents to transition to a more digitized learning process.

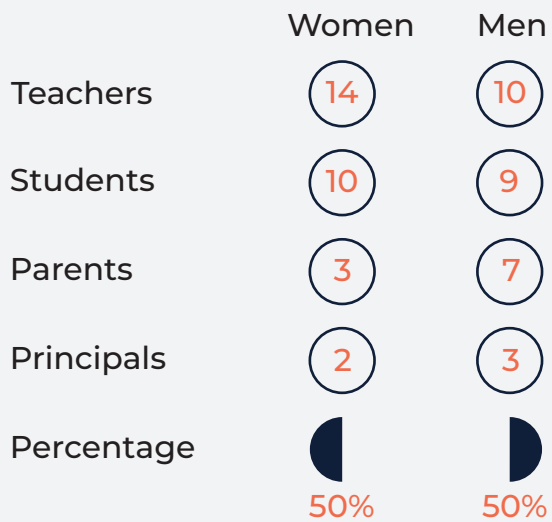
Participants

Within the municipality of Prishtina there are a total of 56 pre-university education institutions grade 1 to 12. From those, 43 schools are elementary and middle schools, and the other 13 represent the total number of high schools. According to the Kosovo Agency of Statistics, the number of teachers in pre-university public institutions for 2020/21 was 2,424. From the overall teacher population in the Municipality of Prishtina, 1,725 or around 70 percent represent elementary and middle school teacher population, while the other 699 or around 30 percent represent high school teacher population. The total number of student population in pre-university public institutions of Prishtina count for 45,266. From this total, 28,110 or 62 percent represent elementary and middle school students. While the other 17,156 or 38 percent represent high school student numbers.

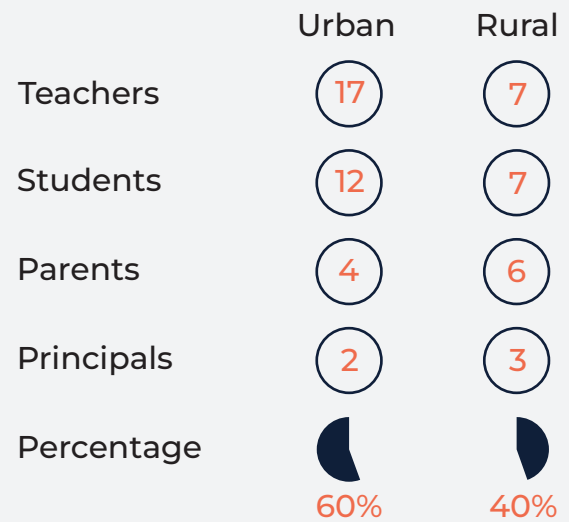
This multi-case study involved nine focus groups, consisting of (n=24) teachers, (n=19) students, (n=10) parents, and (n=5) school principals from elementary, middle and high schools in the Municipality of Prishtina. The schools that were included in the study were selected through the convenience sampling, and the participants were selected by the management of their respective schools. Of the 58 participants in the nine focus groups, the gender, area, and grade level were proportional. Table 1. provides information on the demographic characteristics of the participants, including teachers, students, parents, and school principals.

Table 1. Participant demographics

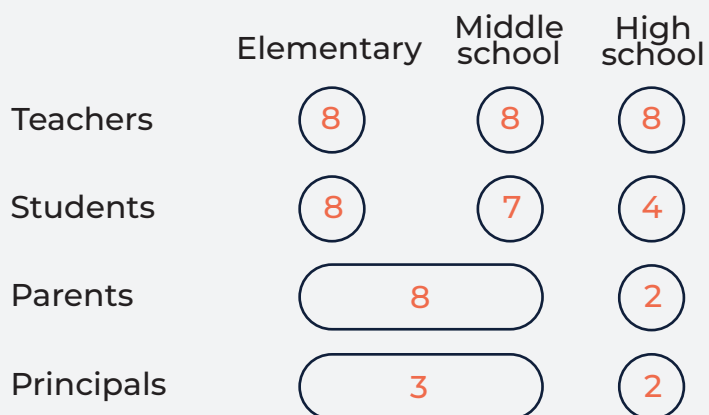
Gender



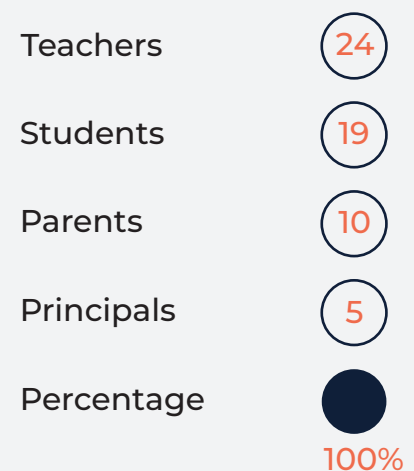
Area



Grade level



Total



To ensure all grades were represented in the study, the researchers grouped the sample population into their respective sub-groups and selected them through the stratified sampling. Although all participants volunteered for the study, we still obtained their approval by having them sign a

consent form. For participants under the age of 18, their parents or legal guardians signed on their behalf.

Data Collection

This study was conducted through in-depth focus group interviews with a total of 58 participants. Teachers, students, parents and principals were invited for a one and half hour interview with a set of 5 main questions (see appendix I). Given the context of the research, all nine focus groups were conducted within the premises of the Municipality Directorate of Education in Prishtina, which also ensured adequate participation. Two KCDE researchers were present at all the focus groups, with one of them always leading the discussion.

The interviews were designed following a semi-structured format, with prepared questions - these questions were modified after the first focus group session with participants. Open-ended questions were utilized to promote detail-rich responses to enhance the study's purpose and contributions. Opening questions addressed participants' professional backgrounds including length of teaching career, subjects, geographical location, and technology competencies. Participants were also asked about the general digital environment within the school, feelings of the transition experience from traditional to online classroom, their use of online or digital instruction, design and implementation features, challenges, benefits, and attitudes towards using blended and digital learning in the future.

Data Analysis

The study utilized the adoption of Braun & Clarke's (2006) six-phase/step methodology approach.



Each interview was transcribed manually by the researchers, thus creating a multi-case study, followed by cross case analysis. All transcribed interviews were coded using NVIVO - qualitative data analysis software - which assisted researchers in managing, coding and analyzing qualitative data from the interviews.

The authors first manually analyzed all nine focus groups and created themes to categorize questions and conduct further analysis. The six themes included context, management, effectiveness, interaction and collaboration, digital learning facilitation, and legal framework.

Authors conducted peer-debriefing once the codes, categories, and themes were created. The lists were cross-checked, modified accordingly, and were tested using the NVIVO coding software. This test ensured that all the codes reflected interview answers and were appropriate for pre-determined categories and themes.

Context

All participants indicate a significant lack of technology equipment in schools. Moreover, some of them claim that even existing devices are outdated and that there has never been a comprehensive initiative by the local or central government to equip schools with technology.

Certain IT cabinets are equipped with computers. However, in most schools, according to the students, there are no computers in the classrooms. The lack of equipment in the classroom turns out to be the biggest problem among students in relation to the use of technology for the learning process. Students show great interest in having lessons in the classrooms where there is a computer.

for example the English language cabinet is so equipped, that we even have a TV that the teacher connects with her laptop, and all the assignments, readings, listening activities that we have in our English Activity Book, are displayed, and this makes it easy for us, and we are more confident to express what we think - Student Response

Students express frustration with the lack of equipment, especially computers. Due to the lack of equipment, teachers have to use their personal phones to show how a project is done on the computer, or even when the lesson is about the computer, there is not a functional one in the classroom. Few schools have TVs that are used for teaching, and even fewer have smartboards. Students have also complained that in many schools the systems within the devices and the devices themselves are very outdated.

Technology (the computer) in a school is mainly used in the informatics class, while the students show little or no use of them in the other classes. In addition, the number of projectors in many schools is limited, prompting students to look for free projectors in other classrooms, or to move to a free classroom with a static projector to present their project, which brings delays and obstacles in other classes.

Urban and rural areas differ significantly in terms of digital infrastructure within the school but also at home. According to teachers, schools in urban areas are better equipped than in rural ones, and therefore integrate more technology for learning.

There are more (digital devices) in the city schools than in the villages: if we have 3 or 4 projectors, we have to share those projectors among classrooms, if I take it in the first lesson, someone else has reserved it for the next hour.-
Teacher Response

Regarding the classroom environment, lower elementary teachers consider the current digital state to be unsatisfactory. Similarly, teachers in the higher classes mainly say that the school and the classroom has limited equipment, and limited access to the internet.

We also have a problem with the internet, it's in the school but it's not functional - no team comes to connect it, I don't know how this works with contractors. It's bad for us even though the staff where I work are young and they are ready to use technology, but the lack of infrastructure does not allow it. - Teacher Response

Despite the fact that the use of phones in the classroom is not allowed, in the absence of other devices, teachers often encourage students to work and develop activities on the phone. Teachers use personal devices to facilitate teaching, as pointed out by one of the teachers who uses the internet to display pictures (e.g. geometric figures, hieroglyphs, etc.) that she cannot draw in a short time. Furthermore, the lack of equipment affects the use and utilization of digital systems created for learning processes.

It's a pretty big contradiction in my opinion, it's a high-end E-school in a system in schools where we have no means at all, that is, lack of computers, lack of everything. It means there is a very big contradiction between what they have created as a system for work while there is still no real basis to use it. - Teacher Response

School principals claim that there are not enough, adequate digital devices in schools. According to them, the equipment in schools and their classes was purchased with individual school initiatives, often taken by the principal, parents or with the targeting of specific schools by international donors.

Principals express frustration due to the lack of IT technicians in schools. This leads to non-utilization of the equipment in the teaching process and, as a result of low maintenance, their faster depreciation/breakdown.

Parents agree that there is substantial lack of equipment in schools, adding that there is also insufficient training of teachers to use them. Furthermore, parents think that supervision is needed from the management to ensure the use of the equipment.

Management

There are several platforms that serve teachers for different activities. For online meetings, they use Zoom and Google Meet, for administrative tasks they use E-shkollori, while for exchanging tasks and assessments, Google Classroom is used, and at the end of the period, E-shkollori is used as a digital gradebook. All of these platforms have served for interaction between teachers and students. As for the platforms used for reporting and interacting with management, Excel has been used at best to report the average scores of the class. Moreover, there are also problems with personal emails of staff in the school.

Email problems often arise, there are no unique emails - someone has yahoo, someone has gmail, someone has hotmail – all mixed up. – Teacher Response

The available digital processes are considered overwhelming and a burden for teachers. They express that the work carried out on the designated platforms should also be described physically.

Our school has been using E-shkollori for two years. Personally, I feel it has been overwhelming for me. We had to put the grades in both the physical and electronic gradebook.- Teacher Response

Some teachers have found a way out of this overloading experience. Although they consider technology and digital processes beneficial, some have decided not to use them - since it is not regulated by law, and legally they are not charged for not using the available platforms. Furthermore, the education inspectorate requires their files in physical form only.

At our school, we utilized the E-shkollori platform solely for grading purposes. It came to our attention that because it was not an official requirement, there was no scrutiny over why we did not use it for other tasks. However, it would have been advantageous if it would have been used and had functioned properly, it would allow parents to view their child's grades/progress regularly. - Teacher Response

According to 1-5 teachers, the current assessment is transparent and supportive guidelines are provided for their students. Notifications for test days are made through Viber, to enable parents to get involved in preparing their children. Meanwhile, in higher classes, starting from the 6th grade and above, the assessment is considered to be less transparent, and parents can only be informed at the end of the period. Even with a digitized gradebook, parents are only notified at the end.

In the (private) school where I used to work, we also recorded the tasks online and the parents automatically received a notification (with a plus or minus sign). They would get notifications whether the student is (sic) absent or not, with permission or not. That is, we have recorded everything that was necessary. This has brought a (positive) result. It is different now (in the public school) since there is no unique platform, and it brings us double work. - Teacher Response

There seems to be a great need for technical support for teachers to use technology. In the absence of technical staff, IT teachers or students take on the role of school tech administrators.

At the school where we work, there is no school IT support, therefore when a teacher needs even the simplest technical help, they have to call the technology teacher and perhaps take them out of their class because there is a technical issue. - Teacher Response

The application that is visibly used the most is Viber. In addition to communicating with parents, teachers create groups with students to inform them about class-related matters, grades, or to give them assignments. For the activities, students have enjoyed using platforms such as Quizlet or Kahoot! They are familiar with the E-shkollori platform, which records their success, but they feel disappointed that they can only see their final grade.

Students have knowledge of the assessment process, which consists of several assessment instruments such as class activity, assignments, projects and tests, divided into two marking periods. However, not all teachers utilize all the evaluation tools. The students have distinguished in their opinion which evaluation instrument they prefer.

The vast majority of them are in two camps, the first evaluation through the test is liked by students who have difficulties in free expression, while the second evaluation through the activity is liked by students who think that the test is limiting, while the activity is evaluated throughout the year, but also that the possibility of copying in the test is higher, which discourages those students from preparing properly for the test. Although there is a fear of teachers' retaliation against them, all of the students prefer to have the opportunity to take oral tests to improve their grades. Also, everyone agrees that individual consultations with teachers lead to increased learning performance.

Students express a high interest in the use of technology during all stages of their evaluation such as: receiving assignments through platforms, making projects on the computer (not hammer paper), presenting them in class with a projector, as well as recording the grade of them on one of the digital platforms.

In order to use the technology, the students did not show a need for support, adding that they are often the ones who help the teachers for this. In general, students think that teachers have a willingness to use technology, but this willingness is shown more among younger teachers than older ones.

In one of the schools, the principal is utilizing practical digital solutions to manage teacher absences and provide training, among other things. This is achieved through simple Excel tables, which have proven to be effective. The principle suggests that the hierarchical chain of principal-vice principal-secretary-coordinator (of quality) should function for the purpose of management and quality assurance. Principals affirm that there are dual processes and that teachers are overloaded with the grading processes they make through several platforms. This proves to be a major problem in schools with overloaded classes. Moreover, principals emphasize that teachers need technical support to make the lesson productive.

Parents have stated that the available platforms are not effective and take time, as well as not being as user-friendly for parents, students, or teachers. At the same time, they have said that there should only be one platform where all actors have access and is easy to use, thus having unification.

Something very simple and usable needs to be thought of. That is, thinking and planning something that has a positive result and works in the Student/Parent/Teacher triad or hierarchy from management to parents - Parent Response

Effectiveness

Teachers have expressed that the technology used and provided to develop digital teaching methods is mainly non-functional. Furthermore, they emphasize that they need to develop their skills to utilize functional technology.

There are two factors why devices are not used, 1) teachers do not have sufficient knowledge, 2) the technology is not easy to set up. Technical assistance is needed. For example, we have received 14 smart boards, which are with projectors and laptops, there is no chance to use them...for me (IT teacher), it's difficult to set them up let alone for the others (teachers of other subjects). - Teacher Response

In cases where technology is functional, teachers are inclined to develop blended learning and integrate technology into teaching. Additionally, they rate traditional teaching as overloaded compared to blended learning. The same is emphasized regarding the use of physical vs electronic gradebook, as well as lesson planning.

There is a split of opinions whether school plans and materials are unified or not. However, what is apparent is that teachers in primary and lower secondary schools report using unified plans and materials, while those at higher secondary level report using non-unified plans and materials. This is understandable given the presence of vocational schools where textbooks may be absent or more focused on practical learning.

In most schools, devices, platforms, and other digital solutions are used based on the discretion of the teacher, who often brings their personal laptop to aid the teaching process.

We used her (the teacher's) computer, but we encountered internet problems, and it didn't work. -
Student Response

Students report that technology in many schools is outdated and slow, which reduces the effectiveness of the lesson. They often have to resort to printing materials that could easily be presented digitally.

We have computers, but they are old and slow, running on systems like Windows 7, which are impossible to work with.
- Student Response

The students have expressed a variety of emotions regarding their experiences during the pandemic. They believe that online learning, in general, has been unsuccessful due to issues such as low student attendance in virtual classrooms, weak internet connections, drained phone batteries, unauthorized access by malicious individuals, and time constraints on platforms like Zoom. Nonetheless, they have found some satisfaction in using online resources to aid their learning.

The malfunctioning of digital platforms has further exacerbated the frustration of parents who are searching for solutions to the weighty load of books that their children must carry to school. This burden hinders the physical development of children, according to parents. Furthermore, parents of younger children complain about the added burden of handwritten homework.

School principals say they often have to foot the bill for repairing devices in the school. When supportive devices like printers and scanners break down, contractors are often unavailable to come and resolve the problem. This discourages principals from adopting technology. However, some have discovered completely digital solutions that can be accessed through phones for various school management tasks.

Interaction and Collaboration

The interaction between students and teachers remains limited within the walls of the classroom. As a result, teachers emphasize the lack of engagement from students in class. As for the current situation, teachers believe that students are not engaged enough.

On the other hand, there is a high level of interaction between teachers and school management, which is determined by their commitments to the school. These can take the form of active roles, care, or disciplinary actions. Regarding interactions and collaboration with parents, although teachers have set office hours, meetings with parents are often unscheduled and are considered burdensome. Information about students is typically shared during parent meetings and, more frequently, through Viber groups.

Increased classroom activity leads to greater interaction between teachers and students. Students hold a high regard for teachers who engage in lesson delivery through discussion and see technology as a means to further enhance their interaction with teachers, thereby improving their learning outcomes.

One student shared their positive experience with a teacher who uses technology in the classroom. The teacher initiates a collaborative process where students come together to share ideas.

My teacher uses a lot of technology. She has a laptop. First, we come together, give ideas and choose the best one for the activity. - Student Response

On the other hand, students have shown disinterest and distraction when class time is spent solely on presentations of student projects without any discussion or interaction with the teacher. This has caused them to lose interest and become distracted.

Students have shown that some of the things that make them more engaged are: cooperation with teachers, discussion, motivation, transparency in evaluation, support of students who fall behind, group work and, among others, the use of technology.

Students claim to be more attentive and engaged in learning classrooms with smart boards.

The use of technological devices and the visualization of lessons would be a great incentive. Lessons are easier to understand when they are seen. - Student Response

Overall, students enjoy working in groups and tend to be more engaged when there is healthy competition among groups. Encouraging all group members to contribute their ideas also boosts engagement. However, students have expressed concerns that low-achieving students may negatively impact the performance of high-achieving students in group work.

Students feel less engaged in class when the teacher delivers a monotonous lesson, such as reading or simply presenting slides without any interaction.

The absence of digital devices, which could enhance the learning experience, also contributes to the students feeling lethargic during class.

Traditional teaching methods are not preferred by students.

Something that is missing in school is teaching students how to present something, how to communicate better. - Student Response

Students believe that parental communication with teachers is average. However, parents of students with disciplinary problems tend to communicate more frequently with teachers.

Students believe that parental communication with teachers helps to improve their performance in learning because of the fear of punishment from their parents. Each class representative has a Viber group with parents, but the use of Viber does not seem to be mandated by government authorities.

Parents express concern about the lack of interaction between teachers and students, and the limited communication between teachers and parents. Such interaction mainly occurs during general meetings, which take place 2 to 3 times a year, or in cases of disciplinary action. Only a small number of parents are satisfied with this relationship.

Communication between the teacher and the parent must be continuous. The teacher must notify the parent about the student's performance, because when the child knows that the parent is in constant communication with the teacher, then the student performs differently. - Parent Response

On the other hand, the school directors have affirmed that this interaction is at a high level, in which case the teachers are open and accessible for cooperation. This indicates that principals may not have substantive information from teacher-parent meetings.

Digital Learning Facilitation

A limited number of teachers have expressed that they have benefited from some technology training. However, the training offered is limited in time and not sufficient to develop the necessary skills for implementing digital learning.

Teachers in grades 1-5 are more reserved or do not have a strong stance on digitalization in the classroom. These attitudes are related to the need for socialization of children at this age, as well as the lack of equipment in school. Meanwhile, the teachers from the upper middle classes have a very positive attitude. These attitudes are closely related to the facilitation of teaching and administrative processes that teachers deal with.

Teachers say they are mostly ready to move to a more digital school environment. However, they recognize the fact that to work in a digital environment they need considerable training and development from using technology to determining adequate materials to share with students. According to them, students and teachers together must be educated, re-educated in the use of technology.

Among upper secondary level teachers, the use of a laptop and a projector for the smooth running of the lesson is directly related to the idea of implementing digital learning. Therefore, from the data extracted from the focus groups, it can be seen that among the teachers of grades 10-12 we derive a significant level of implementation of digital learning. The use of e-mail for exchanging tasks, Google Classroom, or other applications mainly for assessment is also emphasized.

At all grade levels, students express a high willingness to use technology in the learning process. The benefits of using technology are well understood by students.

There are many benefits, technology is used everywhere in daily life and if we learn it at an early age, we improve every year and we will be very ready to work with technology later. - Student Response

However, they are concerned about the level of teacher preparation, especially for those in older age groups, to use technology in the classroom. The lack of devices such as projectors or smart boards in the classroom discourages students from doing their homework and projects on a computer at home, as their work may not be assessed properly.

English proficiency is also a factor in the use of technology according to students.

Technology is a ubiquitous presence, with computers found in every office. As a result, it is essential that we have the skills to use technological devices before completing high school.- Student Response

When it comes to the lower grades, students are particularly eager to incorporate technology into their learning. When asked to depict a favorite classroom, they consistently portray a space that is equipped with devices like computers on every desk, a projector, and interactive whiteboards.

All students are keen to use technology more extensively in school, as they believe that it can make lessons more engaging and boost their interest in learning.

'I enjoy having access to computers to take part in activities and to complete my class and homework assignments more easily.- Student Response

Despite this enthusiasm, students feel that the use of digital tools for teaching is limited. In some instances, they have access to one component, such as a projector, but lack another, such as a computer or laptop, which prevents them from fully engaging in learning activities.

For instance, while we don't have a projector in our classroom, the principal's office does. But even if I were to obtain it, we don't have a laptop to use it with. - Teacher Response

In class, students are prohibited from using their phones and harbor doubts about their usage due to suspicions that their peers would use them mainly for games. When devices are available, students report their frequent use. Certain subjects conduct successful semi-digital lessons in classrooms that possess computers.

The parents and principals exhibit a positive perception towards the digitalization of education in Kosovo and are prepared to implement more digitized processes. They think that such processes can benefit staff and students significantly. Nonetheless, a minority expresses discontent with it.

I envision a scenario where schools have interactive boards aplenty, which are simply the best. You can write on them, play around with them, and try whatever you want. They cater to subjects like mathematics and science, as well as having applications that you can utilize to your heart's content. - Principal Response

Legal Framework

Administrative instruction no. 20/2018 prohibits the use of mobile phones in pre-university educational institutions, about which all teachers are well informed. Despite this, a significant number of teachers allow their use.

By law the use of the phones is forbidden, but I am in favor of a different practice. I practice using it, especially with the dictionary since I am an Albanian language teacher.

So the findings inform us that there are cases in which the law in force is not applied due to its practical inadequacy, we also have cases where the recommended practices are not applied as we have a lack of administrative or legal frameworks that regulate them.

In our school, we have started to focus only on success in the e-school, and we have realized that no one can judge us because we have not used it for other things since it was not official.

Implications and Limitations

Knowledge about the problems educational actors face during their daily work—as well as their attitudes about the use of digital learning in the future or perceptions about the readiness to move to a more digitized environment—has implications for addressing the type of support needed. Findings from this study showed that access to technology remains a problem for a number of them. The issue of technological equipment must be resolved by the Government of Kosovo, through providing equipment to schools. Also, it should be ensured that the curriculum supports the use of technology in the classrooms, as it turns out that in the classrooms where technology is widely used, students express themselves to be more engaged. To raise student engagement, digital teaching methods are perceived to be effective, as they can be adapted to the individual characteristics of each student. However, the professional development of teachers in the field of digital learning still remains insufficient. Therefore, relevant education actors such as MESTI or MDEs in collaboration with professional development organizations should support teachers by offering professional development opportunities that help them integrate technology into their general teaching practices. Such workshops should focus on lesson planning, teaching methods and assessment for digital or blended learning. For better management and communication with different actors in the school, a unified domain (digital identity) is required.

However, while the findings of this research are important, there are limitations to be considered. First, the small number of case studies undermine statistical tests, such as chi-square or regression tests - specifically for measuring actors' perceptions of the Municipality of Pristina - therefore, the results may not be generalizable to contexts of other municipalities. Then, focus groups are often subject to social influence and group dynamics that can affect the validity of the results. To minimize these limitations, it is important to use multiple methods for data collection and analysis for more in-depth studies in order to triangulate the results and increase confidence in the findings.

Conclusions

- 1 Digital equipment are in short supply, with computers, projectors, digital boards, printers, and internet devices among the most essential. This is confirmed by all stakeholders, who note that even in schools with adequate devices, most are outdated, slow, or partially non-functional due to a lack of maintenance. (second idea) There are no IT officials or technicians in schools to support device use. The procurement of devices has been done through individual initiatives, often by school management, teachers, or parents. Additionally, a significant portion of devices have been purchased for specific schools by foreign donors. Local and central authorities have not been systematically providing schools with devices, instead buying them sporadically and giving schools their old devices. Very few schools have a considerable amount of functional devices that are used effectively.

Recommendation

- | Assessment of all equipment in schools, including recording their quantity and type as well as the year of purchase.
- | Systematic supply of new equipment through public procurement, or donor coordination for equal distribution of equipment.

- 2 The utilization of technology poses a challenge for teachers. It is worth noting that age plays a role in this, as older teachers tend to be more hesitant due to insufficient training. Only a small minority of them have received adequate training to be competent in digital skills, while the majority have not had the chance or motivation to take part in such training. Nonetheless, most teachers are willing to undergo training.

Recommendation

- | Drafting of equipment maintenance protocol, including a guide for their testing
- | Hiring a number of IT officers who would support the schools

- 3 In classes where technology is incorporated for teaching activities, students perceive more involvement of their peers. Teachers are also eager to use technology more frequently, citing traditional methods of teaching as tedious and unappealing to present-day students. The digital or smart board is favored by all as it enhances attentiveness and engagement in the classroom.

Recommendation

- | Engagement of trainers through public procurement or coordination with foreign donors.
- | Incentivizing teachers to complete the training.

- 4 Teachers and school administrators express great frustration due to the redundant administrative processes on digital platforms that also require physical copies. This is particularly notable when tracking student success, which teachers must document in their personal gradebooks, the school's physical gradebook, and the digital gradebook only at specific intervals or semesters. This process is time-consuming and increases the chances of errors, making it difficult for teachers and parents to monitor student success. Handwritten records are still used for teacher activities, and reports on absences and irregularities are also done manually. Viber remains the primary mode of communication between stakeholders, with groups created for students, parents, teachers, and other groups on specific topics. All notifications are sent through this platform, and it seems that all schools use it.

Recommendation

Guidance for greater inclusion of technology in all subjects, not just technology/informatics classes.

- 5 Teachers and school management express their frustration regarding the duplication of administrative processes on digital platforms in which they are also required in physical copies. This is especially noticeable in evidence of student success, where teachers should present in personal diary, physical school diary and digital diary only at certain periodic/semester times. That takes a lot of time and increases the likelihood of errors, furthermore it makes it impossible to monitor the success of students by themselves and their parents. Active teachers still keep minutes by hand, as well reporting of absences and irregularities is also done with manuscript. The main communication between the actors remains Viber, in which it creates groups with class students, parents, teachers, as well as other groups with certain topics. All announcements are carried out through this platform, and it can be concluded that all schools use it.

- 6 All parties involved are highly motivated to adopt a more digital approach to learning, with the exception of a few teachers who have minor concerns. It is agreed that this transition should begin with the provision of appropriate equipment and training to ensure competency in their use. Students in particular recognize the significance of technology, not just for education, but also for securing higher-paying job positions in the future.

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APPENDIX I

For the purpose of this study, the participants answered questions related to:

The current situation

Tell us the two main problems you face in class or outside it.

- In addition to teaching, what other processes do you deal with within the classroom (registration of the class lesson, absences)
- How long does lesson planning take you? Please describe its process. Is it standardized?
- What are your responsibilities to the school management? - Do you have reports, what do they look like?
- If you use technology, describe how you use it in the processes mentioned above.

Classroom management and its facilitation

Describe student engagement in the classroom.

- When you think about the moments when students are most engaged or focused during class, what does that look like? What do you notice about students that stands out the most?
- What do you think would increase the students' engagement and their attention in your classroom?
- Do you practice group work activities within your classroom? If so, how do you organize it?
- How much do you incorporate technology into the classroom? Describe it.

Evaluation and support

Describe the student evaluation process.

- How is the evaluation of students done?
- What do you think would help you to support students further?
How do you think technology will help you here?
- Do you think that students should have access to lessons at home, especially those who have more problems in learning during the classroom lesson?

Teacher-parent relationship

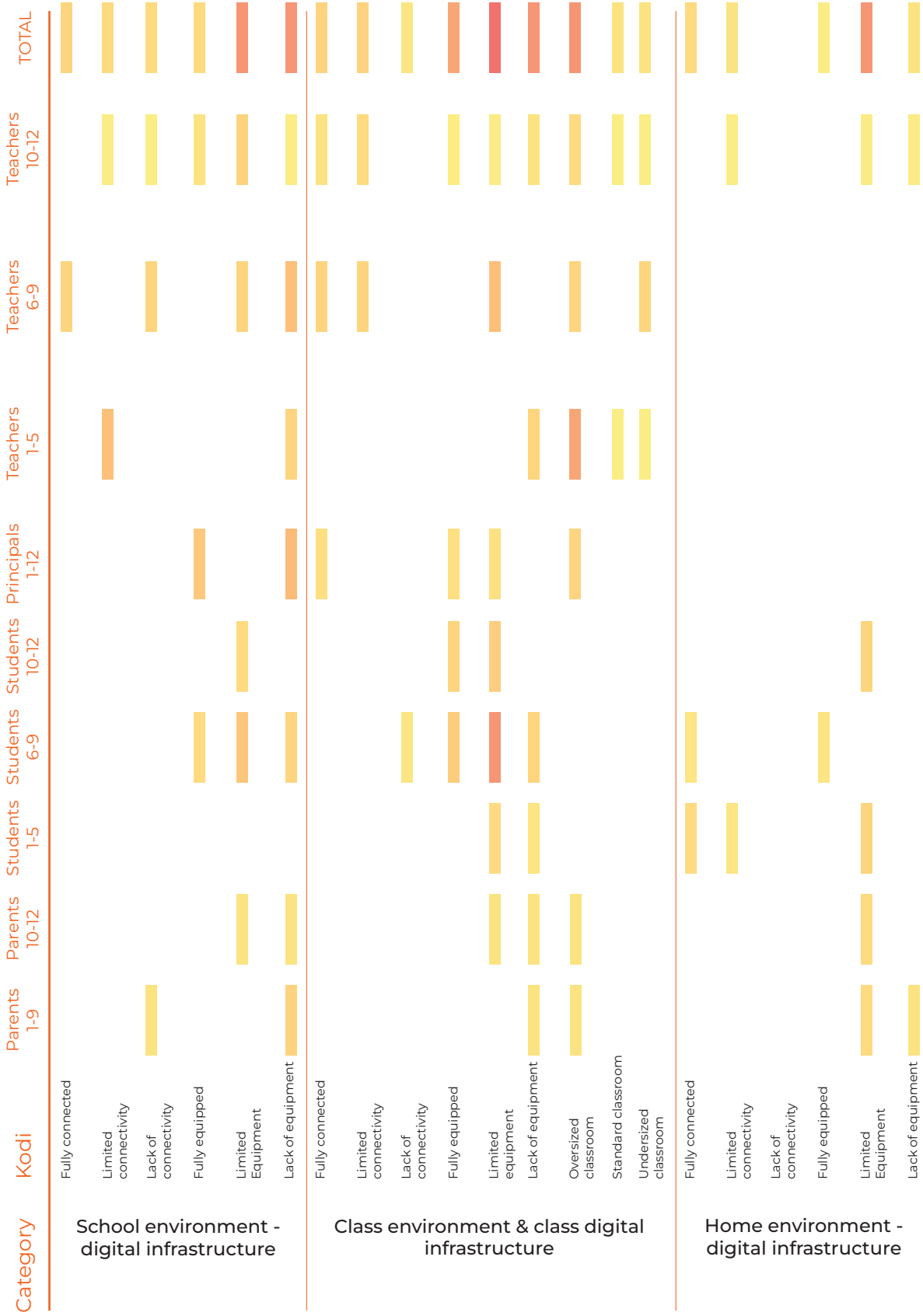
How often do you contact parents? How do you contact? How does this affect the students' results?

Readiness and preparation

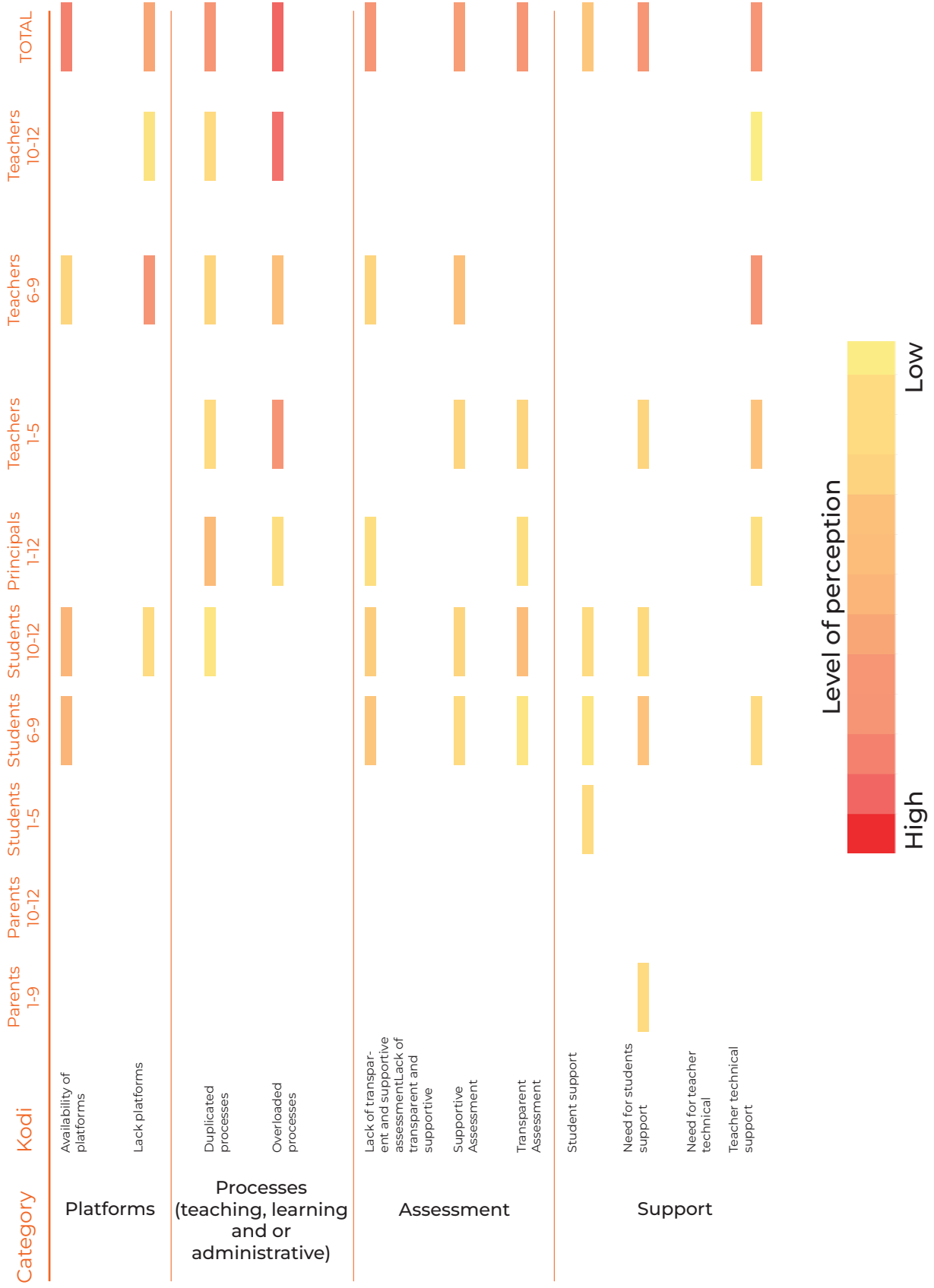
Describe your experience with the digital learning process so far.

- How much do you think the teachers are prepared to use digital devices for the learning process?
- Considering all this, how would you explain the willingness of teachers to include digital learning within the traditional classroom (including videos, quizzes and digital games, digital presentations, etc.)?
- What would encourage greater use of technology by teachers?

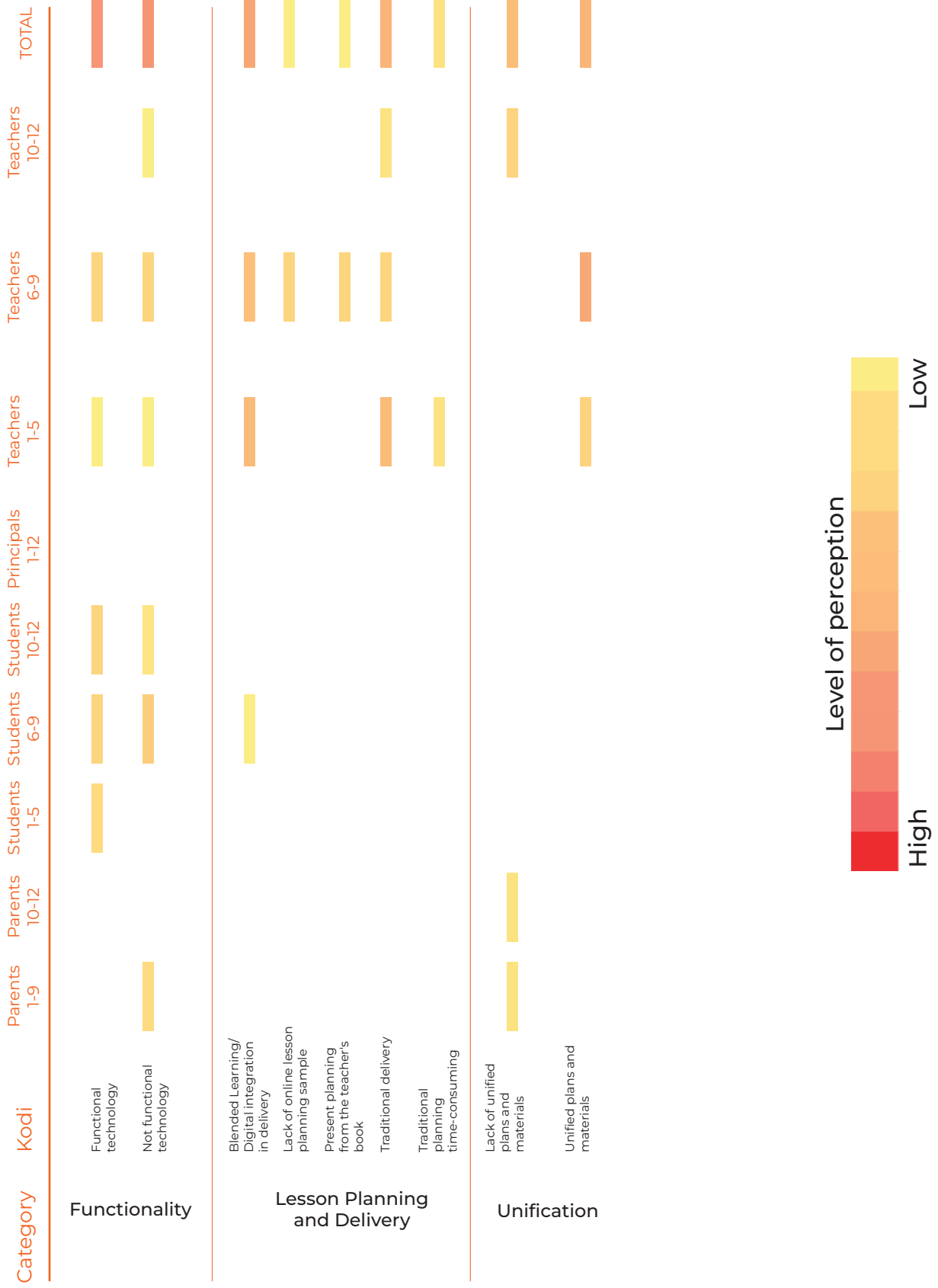
Context



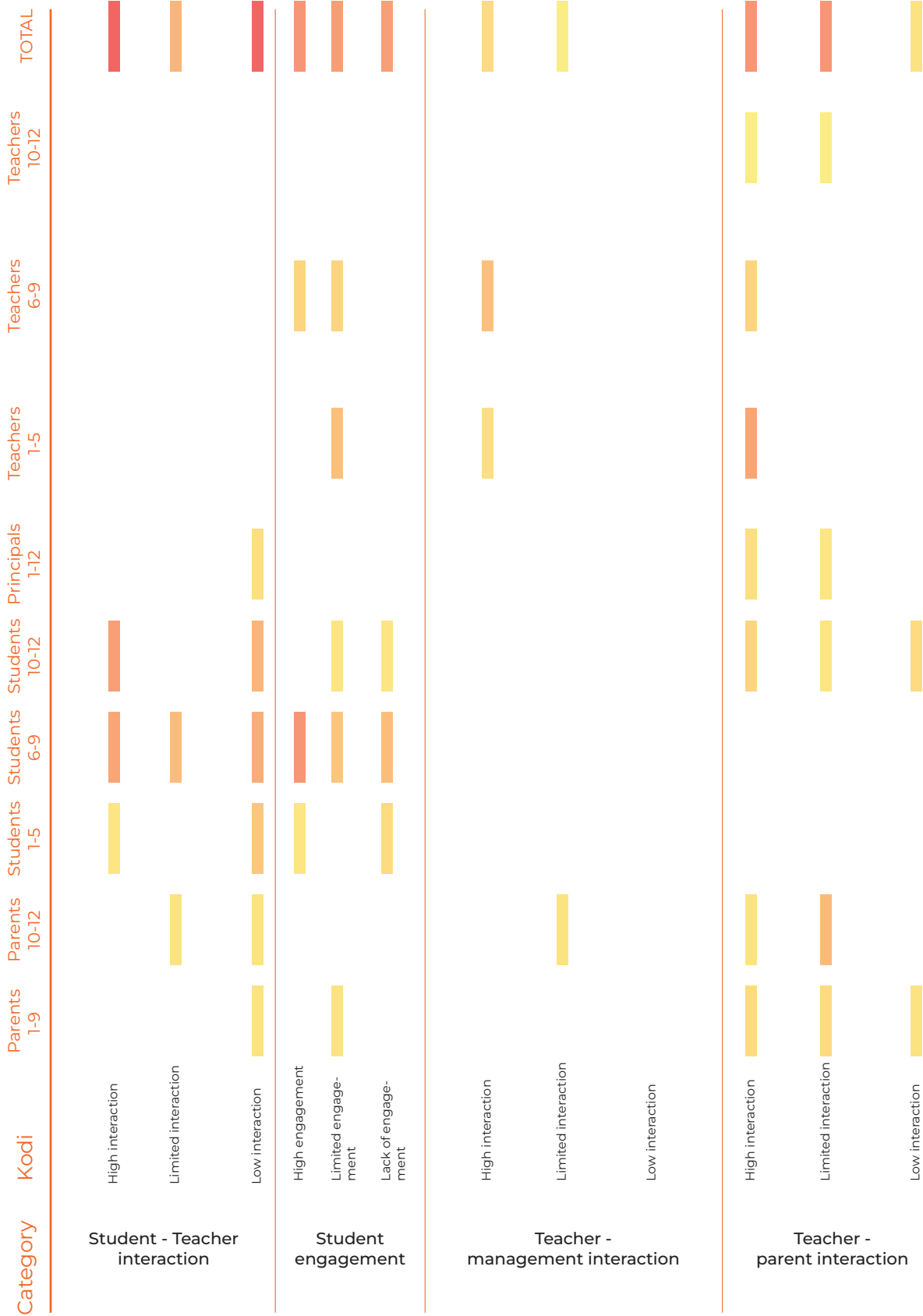
Management



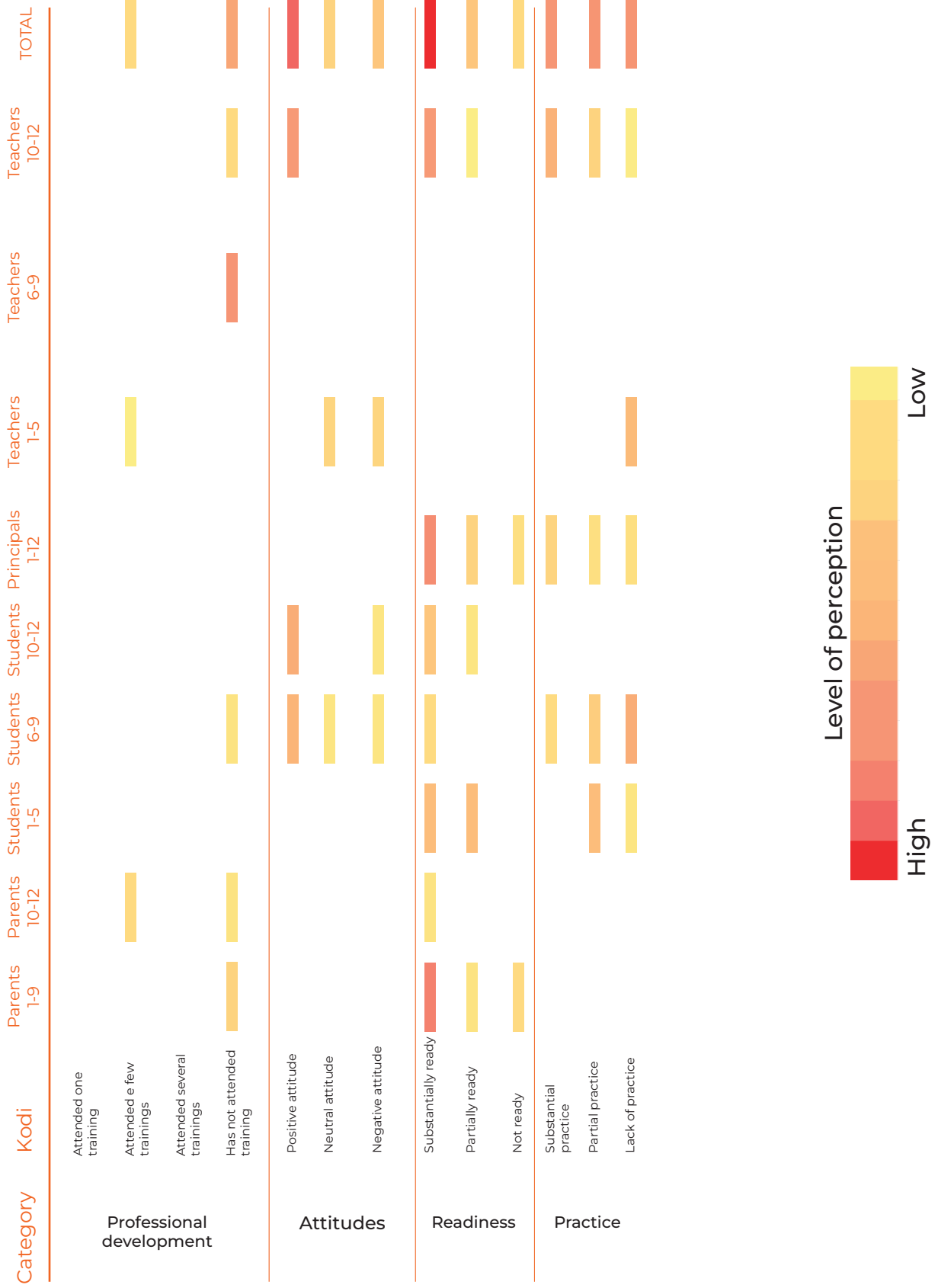
Effectiveness



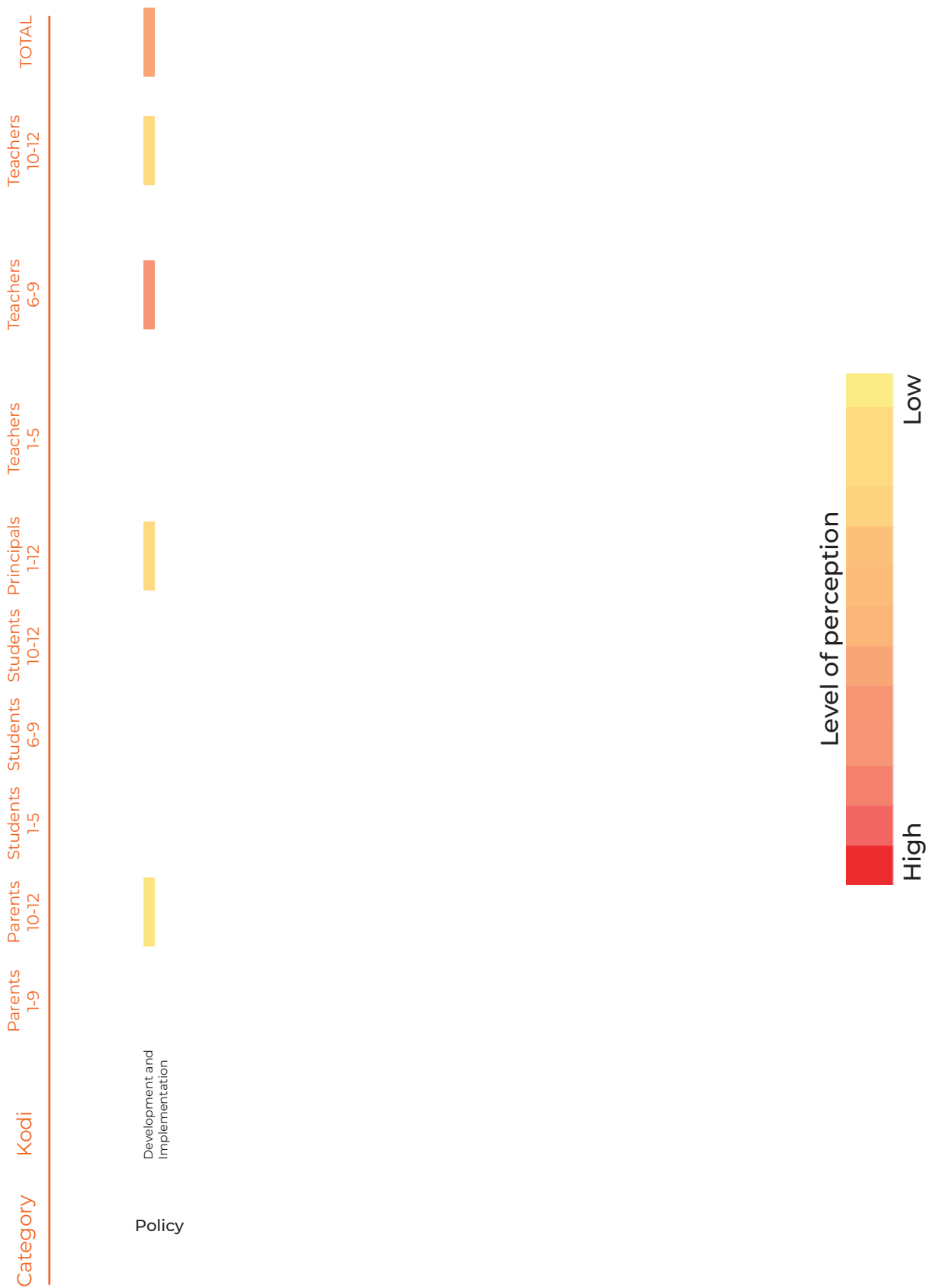
Interaction and collaboration



Digital Learning facilitaiton



Legal framework



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