



RESHAPING HOW STUDENTS LEARN
USING COMPETENCY-BASED LEARNING

AND HOW AN LMS CAN SUPPORT THIS

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Introduction

The American educational system is almost paralyzed by standardization. Students of all levels are being measured against an incredible number of factors, focusing more on test results instead of *if* they actually learn something. When did standardized test results become more important than the actual acquired knowledge?



The major problem of any educational institution is that it's too *topic-centric*. Everything is more about the subject being taught — is it compulsory or not, how often students have it in their curriculum, when and where they have to learn it, how and when they get their new knowledge assessed — and less about the students, even though they are the main reason the education system exists in the first place. Students have almost no say in establishing these aspects about their learning process. In a world that desperately needs creative problem solving ideas, standardized education fails to provide and nurture the necessary skills today's students should develop if they are to become successful in the future.



The good news is that we're starting to see a shift in education towards student-centric learning. Students are being given more and more agency over their learning process. Standardized ways of delivering instruction to a classroom of students only cater to about a third of them; another third usually need more support, while the last third get bored as they have to wait for all the others to catch up when they could easily move on to a more advanced level. There's usually only one pace for learning in a standardized classroom. Student-centric learning recognizes that students have different learning needs and the educational system should be meeting these needs by personalizing learning experiences for each individual student.

One of the key aspects in this shift from topic-centric to student-centric learning is the focus on acquiring knowledge, no matter the means, no matter the pace. One small learning gap at the beginning of the learning process usually leads to more learning gaps during the process, and after a while serious consequences can occur: less than stellar grades, failing the subject or even dropping out of school completely. Students shouldn't be allowed to move on to more advanced lessons unless they completely understand and prove mastery of the basic ones. This whole idea is referred to as **competency-based learning**.

3 Core aspects of competency-based learning

Learning is a unique process for each student. It's actually physical. Learning is for the human brain what exercise is for the muscles; the more we do it, the more fit we become. Whenever we learn something, neurons are being fired and new synapses are being formed. The information gets to the short-term memory at first (where we can easily forget it) and after it is consolidated it moves to the long-term memory. When it gets there we'll be able to retrieve it easily, no matter how much time passes between the moment of learning and the one when we need that piece of information. Getting as much knowledge into the long-term memory of students' brains is what education is supposed to do.



The trouble is, short-term memory is enough to pass a test. Too often a student learns just to pass the test; they prepare beforehand and learn by heart what they're supposed to know, get a good result for the test and after a while forget almost everything. Competency-based learning on the other hand focuses a lot more on the students' long-term memory. When a student understands all aspects of a new concept they're more likely to remember it, long after any test is passed.

There are three aspects of competency-based learning that support students in acquiring knowledge and getting it into the long-term memory:



1. Time is no longer a stress factor

Not having enough time is always stressful. Students have time constraints on everything:

- They have to be at school at a certain time to attend a class, and if they arrive late or leave early they are penalised.
- They have to spend a certain amount of time on each subject every day; a class usually lasts from 40 minutes for younger students to 2 hours or more for those in college.
- They have to complete and turn in their assignments by a certain deadline as well.
- They have to pass any test within a limited period of time.

But with competency-based learning, time is no longer such an important factor. As long as they learn, it doesn't matter how much time it takes them to do it. Students can decide when to learn, how much time to spend on each lesson or subject, what kind of assignment to work on and when to be assessed. In a competency-based learning environment, these aspects will vary greatly from student to student. There may be some time constraints nonetheless, but these are fewer and negotiable.

2. Flexibility is paramount

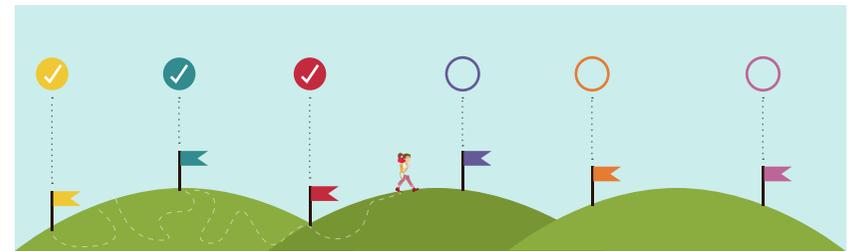
Standardized curricula, standardized tests and standardized policies don't respond to the needs of all students - nor teachers. Educators know their students and know best how to meet their learning needs, but more often than not, they don't have much wiggle room to respond to these needs. For example, both individual work and group activities need to happen in a classroom. Kids are naturally attuned to one type of learning activity or another, but teachers can't let them do just the one they like. All students absolutely have to do both types of activities and be graded for them, because that's what the standards require and teachers have to respect those standards. While it is indeed important to learn how to work alone and collaborate with peers, students can actually achieve these skills across the school year, not exactly from each lesson.

Competency-based learning lends an ear to what a student has to say about the types of activities they want to engage in, how long they'd like to dive into the subject (each day or for an extended period of time), their preferred method of assessment and more, and accommodates these aspects at a much higher degree than standardised education. It doesn't really matter how they choose to go about their own learning process, as long as they learn.



3. Proving mastery is all that matters

Students usually earn the same number of credits as long as they get a passing grade. But we all know there can be a big difference between a D (or C, depending on the grading scale) and an A+ student. That difference, when translated into actual knowledge, means that some students are allowed to go on to more advanced-level classes even though they don't master everything they should in order to ace those classes. Students get to think they're not good at a subject or another just because they acquire knowledge gaps that they don't have enough time to fill. The standardized pace of the classroom sends the message "Keep up or fall behind!" (and it is not aimed at students with different abilities at all).



Competency-based learning is designed around the idea that every student can be a top performer, so proving mastery is all that matters. How much time it took them to get there or how exactly they chose to prove that they indeed learned something depends on each of them and doesn't affect the academic outcome. And they all move on to more advanced levels without knowledge gaps.

When time constraints are no longer an issue, students are being given voice and choice and are encouraged and supported at every step of the way in their learning process to demonstrate their mastery, not only their academic results will improve, but their perception of school and the enthusiasm for learning will skyrocket.

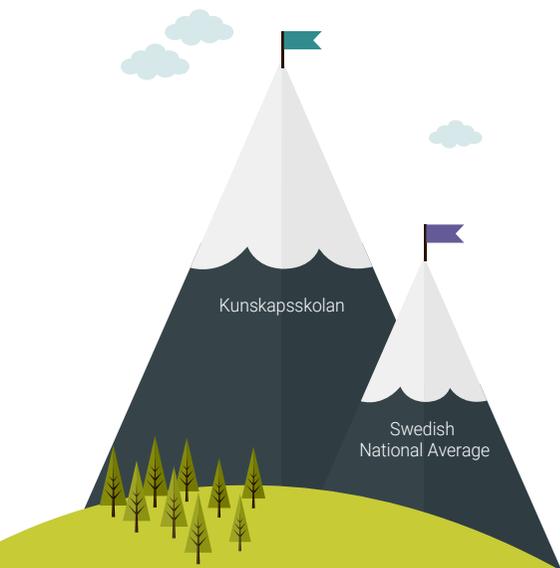
And the best part of competency-based learning? It can be applied in all educational institutions at all levels and students of all ages can benefit from it.

Competency-based learning for K-12: A Swedish example

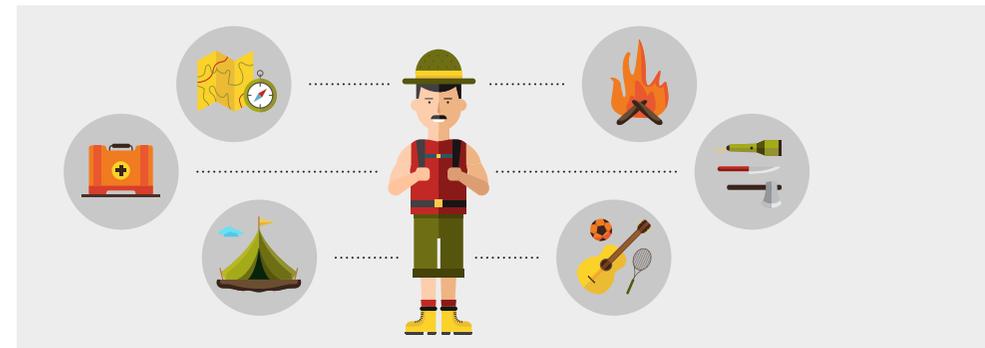
There's this fantastic system in Sweden, that has started to gain traction internationally as well, called Kunskapsskolan¹ – in plain English words this means *knowledge schools*.

The Kunskapsskolan schools recognize each student as a unique individual with their own unique interests, strengths and previous knowledge. This approach enables the school staff to identify personal learning needs of students and spend their resources to meet them as thoroughly as possible.

It's a private school system, but it's one of the fastest growing school systems in Sweden². These knowledge schools, despite their limited number, are leading the way in Sweden in terms of competency-based learning. Their approach to education has proven to be successful with all categories of students and their overall performance is higher than the Swedish national average.



Here's a glimpse of how a knowledge school works. The designers, which are all experienced educators, take all the things a student is meant to learn between the ages of 7 and 18, and create a huge competency graph of it all, with all the subjects and all the corresponding levels. They then turn to education technology and create a series of online courses and learning modules, all linked to each of those competencies. Thanks to edtech the school can keep track of each student's personalized knowledge of all of these competencies.



When a student joins the school, they get a personal mentor or coach and that educator will be the student's main guide during their learning process. Students, alongside their personal coaches, can influence how they spend their time based on their previous educational experience, as well as their individual strengths and weaknesses. This means that students identify, set, and work towards their own personal goals, with the ambition of achieving the best academic outcomes as possible. These learning goals are set together between each student and their mentor and are usually clear, realistic, yet challenging.

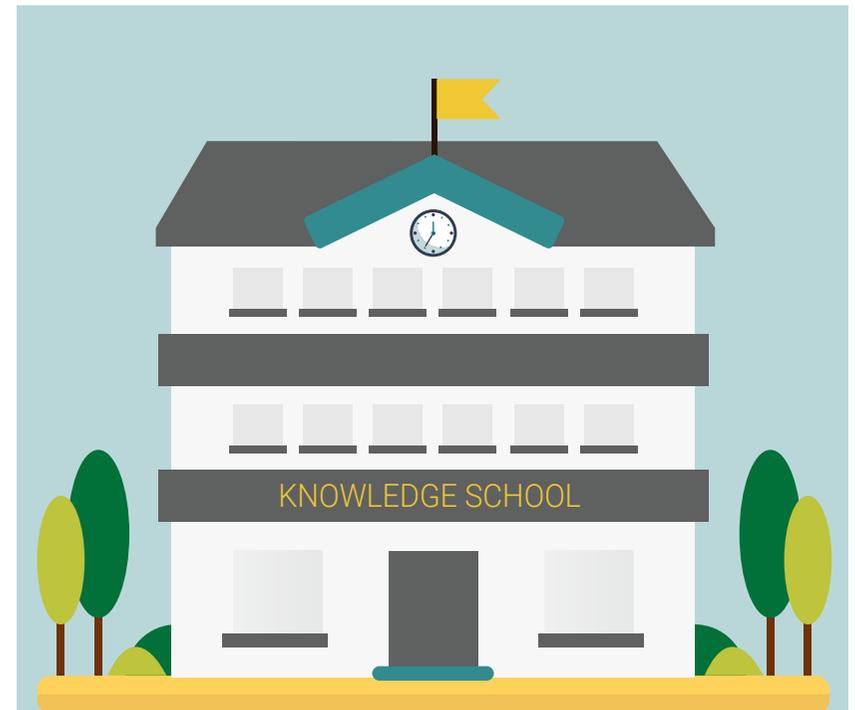
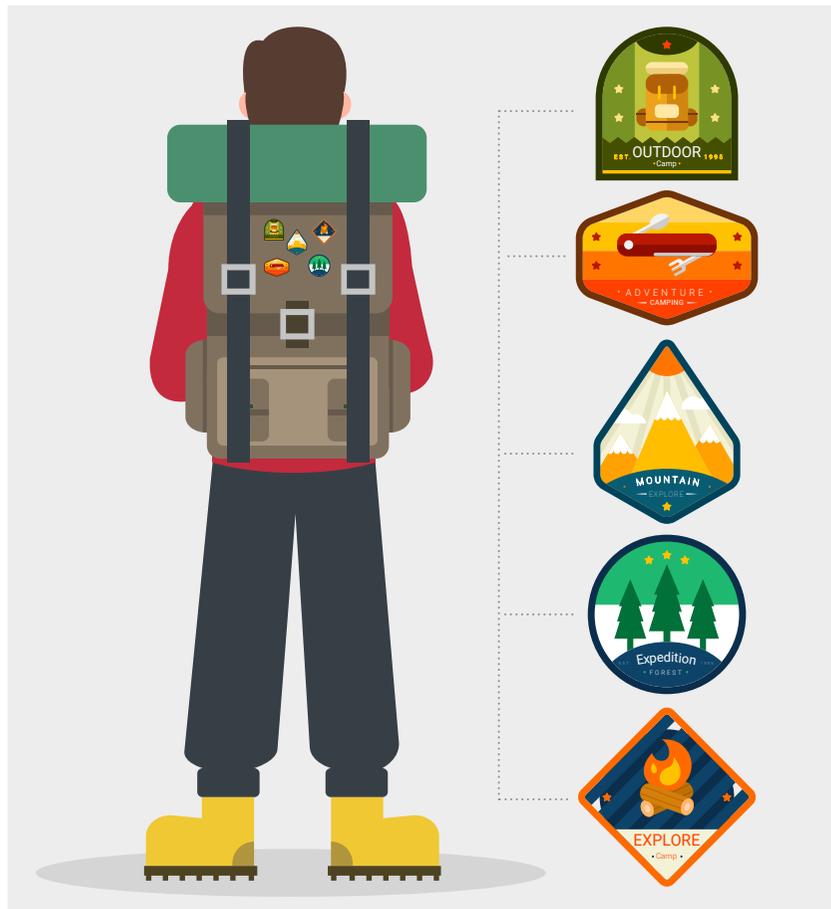
Students can go as fast as they like through any subject and they don't have to physically be at school at certain times when doing that. They can study at home or come to school, or work with peers wherever they want. If they get stuck on a concept, they can schedule a private session or group session with the teacher. They are able to see their own progress and personal development step by step within the online system.



¹ <http://www.kunskapsskolan.com/>

² <https://www.economist.com/business/2008/06/12/the-swedish-model>

When it's time to prove they mastered the material, the school has a proctored system where students take a series of tests. Kunskapsskolan schools have an international presence, but they adapt to the educational environment, follow the curriculum of each country they are in and grade student performance according to national standards.



The Knowledge Schools have focused more on secondary education but they're constantly extending the program to other age levels, with a number of primary schools already running in several locations.

The Swedish example of Kunskapsskolan schools is just one in a growing number of others. If a small network of private schools can successfully adopt competency-based learning, other schools in different countries and regions can do it too. Furthermore, considering their success and expansion internationally, this approach has high chances of being implemented in public education systems of big countries such as the USA.

Competency-based learning for Higher Education and Further Education

The traditional education model makes no compromises: you're either all in, or you're not at all. But being a spouse, raising a child and having a job in order to sustain that family — and pay for the education tuition — are not frivolous things that can be easily compromised either. That's why so many adult students seem to be stuck between a rock and a hard place when it comes to pursuing higher education while having work and family commitments. And when something is imperative to be compromised, that something is too often the college degree. There are more than 37 million American adults with some college but no degree³. Graduating from Higher Education while having a full-time job and/or a family seems almost impossible for too many students. Further Education may have better graduation rates, but things are not perfect there either.



More and more HE and FE institutions are providing competency-based learning programs precisely to meet the needs of this numerous cohort of students. In such programs **students** must be self-directed learners, must have some experience or at least an immense passion for their chosen field of study, and they must be motivated to succeed. They need to put in the necessary time and some substantial effort to earning the degree they want, not just check the box of attending some courses.

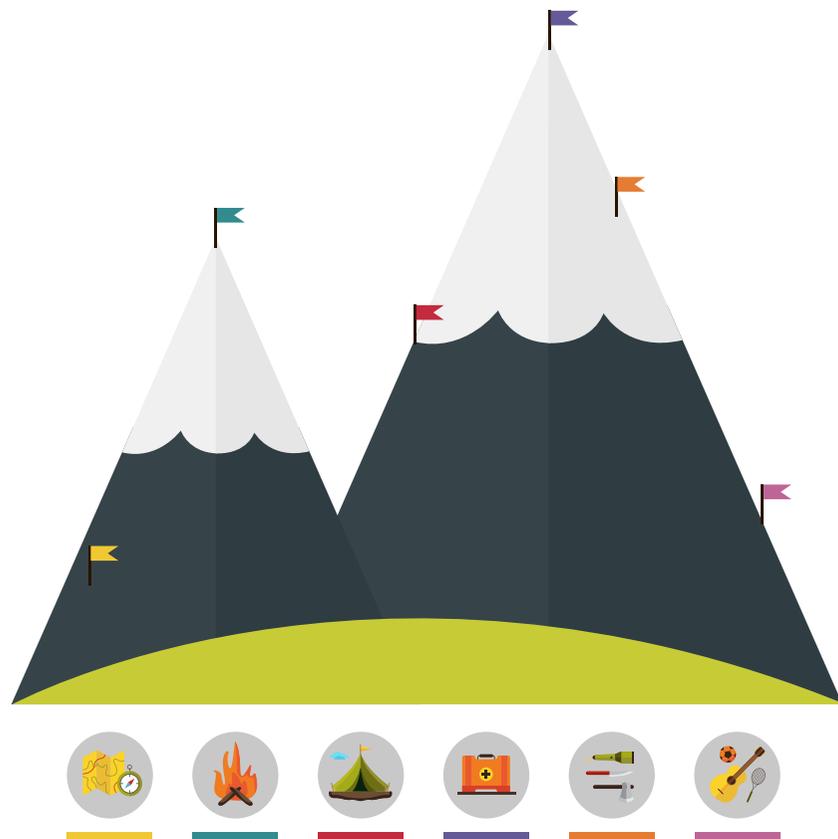


In return, they get so much more control over their learning process. They decide how much time they can put into studying, and when to be assessed. If they already know something due to prior studies or work experience, they don't have to spend too much time on those topics; they can immediately get assessed and then move on to other learning modules. This means education for them is much more affordable, since the fee they pay is not calculated based on seat time but on proof of mastery⁴.

If students can fit studying into their schedule of work and family time — not the other way around — and study when it's most convenient for them, their retention rates get higher and their academic performance improves. When they get the degree, it can eventually be translated into a promotion, a raise, or even a better job.

Besides students, **professors and faculty staff** benefit as well. The role of the educator is being transformed to include more coaching and mentoring. Professors will be the ones to set the desired learning outcomes in their areas of expertise, provide engaging learning materials, create addictive learning experiences and provide targeted support for students. They'll also get more data on the student learning process, which means that they'll be better able to identify the strengths and weaknesses of each student and therefore better adapt their instruction.

But designing a competency-based learning program for HE or FE is not a particularly smooth process. Identifying and agreeing upon the most important skills and competencies students should acquire at the end of a competency-based learning program could be a challenge to all faculty. Then they will have to identify and agree upon aligning those sets of competencies to learning resources. Then, they need to decide upon the best methods of assessment and the best way to track student performance. This entire process is indeed challenging, but it's definitely worthwhile.



Last but not least, adopting a competency-based approach to education can lead to great benefits for **HE and FE institutions**. These kinds of programs can attract a higher number of potential students, especially those that need a lot of flexibility from their studies. Institutional leaders can see an increased satisfaction of students in their learning program and overall higher graduation rates.

But the leadership of educational institutions also face a number of challenges when it comes to adopting competency-based learning programs. It can be really hard to track what each student is doing at each class when they're involved in cross-disciplinary projects. In order to achieve this, they need to make many significant changes to established processes like the methods of instruction, assessment, reporting or graduation.

Moving on to a competency-based learning program in higher education and further education is an arduous endeavor, for all stakeholders involved in the process. However, successful examples continue to pop up and it's only a matter of time until this student-centered approach to creating, delivering, and consuming education will be more common among HE and FE institutions.

The role of the LMS in designing competency-based learning

In both K-12, HE, and FE education, competency-based learning has a technical component as well. Educators need all the help they can get if they are to design learning experiences that are different to what traditional educators got us all too used to and edtech is always ready to give a helping hand.

There are currently plenty of technological solutions that can support educators in creating and delivering instruction with competency-based learning in mind. A learning management system (LMS) is one of the best, since it usually comes with various and comprehensive set of features. With the help of an LMS educators can design online classes, resources, assignments, and assessments based on student competencies.

No matter the grade level, each online class has to teach all the concepts that students need to know for their level. Using an LMS, the teacher can create a new competency set for the class or use the built-in common core competency standards if these are available within the system. Either way, each lesson and assignment can be tagged with the competencies that students are being taught and assessed for.

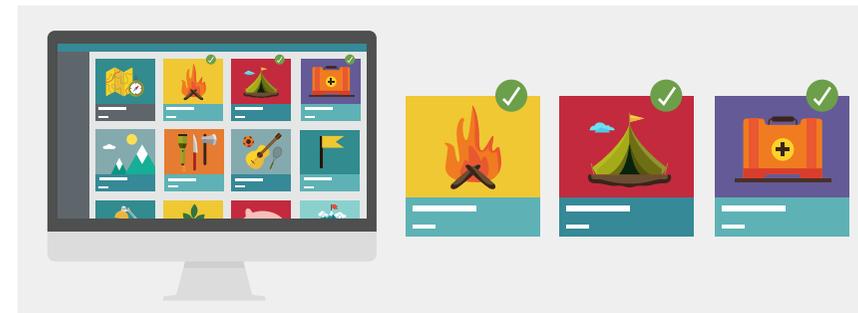
Teachers can keep up with each student's progress through the class and have an overall view of how well the class teaches the competencies, being able to intervene if students are struggling with a particular topic or need additional help. They are then able to see if the lesson only partially teaches the concepts or if there are certain learning units that don't cover any competency.

Also, teachers can track student's progress through the class and see how well they are doing on each competency. They can also trigger actions such as automatically sending messages, enrolling students in groups, and awarding badges based on their mastery performance. This way, they can make sure that students are assessed equally, that they are learning what they are supposed to learn, and that they receive support when they need it.

12 LMS features that support competency-based learning

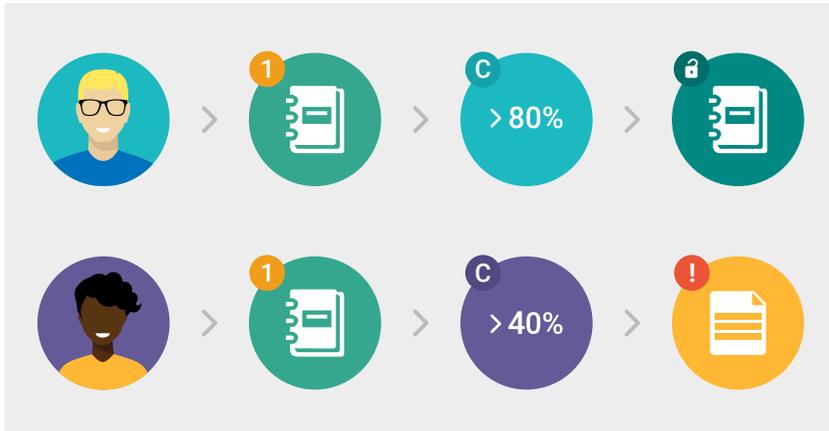
Here is a list of features any learning management system that supports competency-based learning should have:

1. Upload or create competencies. Teachers should be able to create competencies directly in the LMS or upload their own. The system could offer a library of built-in standards such as US Common Core Standards, Next Generation Science Standards, ISTE standards, and various other state standards, depending on where the school is based. Also, they should be able to add one or more sets of competencies to a class.



2. Add competencies to lessons and assignments. After competencies have been added to the class, teachers should be able to tag lessons corresponding to the competencies they were created to teach. Likewise, teachers should be able to tag assignments with the competencies these should be assessing.

3. Coverage analysis of competencies. After tagging the class content and assignments with competencies, the system should be able to offer an overview of how well one class or another covers the corresponding competencies. This would provide a great way of identifying weak spots in each class and making sure each competency is being taught and assessed during the class.



4. Automation for mastery. Teachers should be able to add actions that should be triggered automatically when a student reaches a certain competency level. For example, if a student achieves more than 80% on a competency the system could unlock an advanced lesson that was previously hidden. Or, if a student lingers at a 30% or 40% competency level for more than a week or so, the teachers could set up a rule to get an alert when this happens and send students recommendations on how to improve in that area. There are many options for this to be done, triggering actions like enrolling students in other related classes, sending messages to students and teachers, locking lessons, and more. This is a very powerful feature.

5. Save and share competencies as resources. Created competencies should be stored in a library and be reused for other classes whenever necessary. They could also be shared with other educators within the same university, school or even at a district-level.

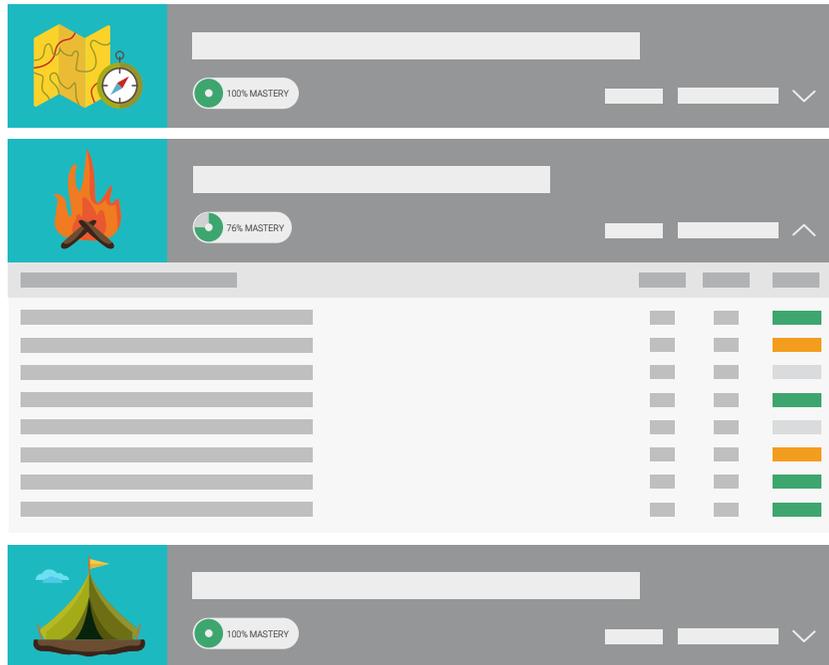
6. Ability to tag resources with competencies. Classes are only one way for students to learn new things; all the extra resources can be as valuable for them. That's why the system should allow teachers to tag any learning resource with a corresponding competency.

7. Tracking student progress in classes. As students advance through the class teachers should be able to see an overview of their mastery level and how well they understand the concepts. It should therefore be easier to identify areas where students are doing well or where they are struggling. These mastery levels for all students should be updated in real-time.



8. Comparison mastery charts. This could come pretty handy for an entire classroom, especially a very large one. Teachers could be able to see how a student ranks against their peers in terms of their learning progress. They can then identify patterns among students and create more and more relevant automatic rules if necessary.

9. Student view of mastery. Mastery progress should also be displayed on the profile pages of each student. Students should be able to see a detailed overview of their progress through the class competencies, so they can also identify on their own any weak points or strengths.



10. Charts that show mastery over time. There are two kinds of competition: one against others and one against oneself. These types of charts could help students get an overview of their learning progress over a longer period of time, even over more than one class, thus becoming aware of how far they are on their journey.

11. Competency picker. Many students are self-directed learners and are perfectly capable to identify on their own their learning gaps. Based on their goals, a competency picker would allow them to pick and choose certain competencies that are available within the system and pursue their mastery.

12. Ad-hoc reporting support for competencies. Of course, whenever a teacher needs to see a few particular aspects about a student's performance within the competencies or about a class, the system should be able to pull the necessary data and deliver an on demand report.



People are beginning to realize that if you actually want personalized education for students of any age, then the system which is going to be personalizing their education has got to know their strengths and weaknesses. Otherwise, how could it personalize? And the best way to track student strengths and weaknesses is to track their demonstrated mastery of these various different competencies.

This list of LMS features that support competency-based learning is by no means an exhaustive one. New features will continue to join it as long as the technology continues to advance. Things have just only started to move towards competency-based learning, after all.

Conclusion

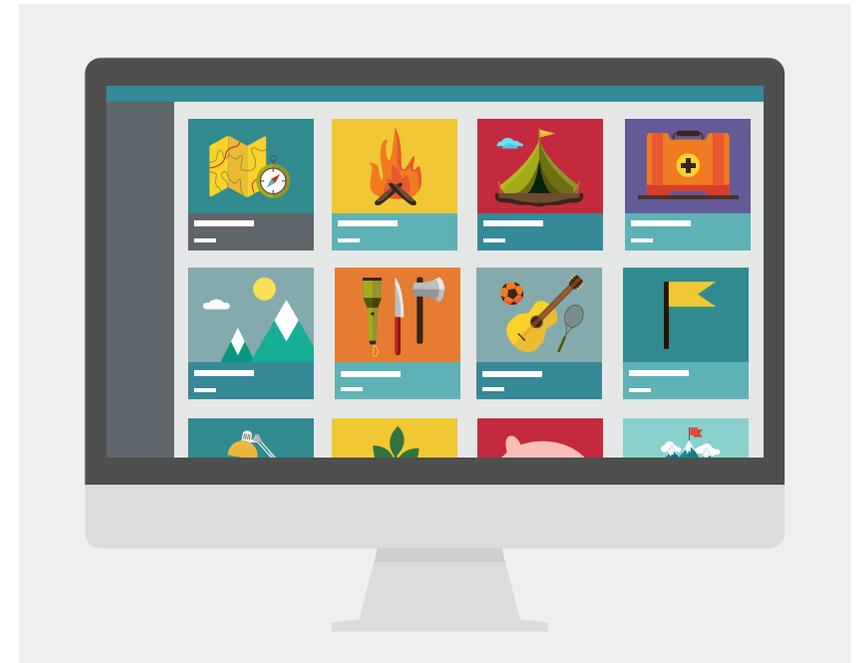
To sum up, we're currently witnessing a shift in education, from topic-centric to student-centric learning. One of the key aspects of this shift is the idea of competency-based learning, which emphasizes the demonstration of concrete and measurable skills. Students are being given more agency over their learning process, with less time constraints and more flexibility, but are required to prove their mastery of the acquired knowledge. The educator's role shifts as well, towards offering more guidance for each student and providing more targeted support.



Competency-based learning can benefit students of all ages, from kindergarten and primary school to high school and then to college and further education. Educators can meet the various learning needs of students of all these levels by using edtech tools such as a learning management system with a comprehensive set of features that support competency-based learning.

“Competency-based learning is the key to opening the floodgates to personalized learning.”

— *Graham Glass, CEO of CYPHER Learning*



If you're looking for a tool to help you get started with competency-based learning, try out CYPHER Learning, a learning management system for schools and universities with a comprehensive set of features. To the best of our knowledge, CYPHER Learning now has the best support for competency-based learning of any mainstream LMS, with all of the above mentioned specific features either already implemented within the system or on the roadmap for the very near future.

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