



CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Tackle Learning Loss with the Science of Reading

Webinar Audio Transcript

Dr. Martha Burns

April 20, 2021, 3:00 EDT

1

00:00:11.219 --> 00:00:12.389

Welcome

2

00:00:25.980 --> 00:00:26.970

Kasey Bratcher: Welcome everyone.

3

00:00:31.830 --> 00:00:36.000

Kasey Bratcher: Happy Tuesday afternoon had to think about that one.

4

00:00:52.560 --> 00:01:01.980

Kasey Bratcher: Well, welcome everyone to our reshaping education webinar series i'm Casey bratcher SVP of professional learning here at Carnegie learning and we are stoked today.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

5

00:01:02.340 --> 00:01:07.050

Kasey Bratcher: To have our director of neuroscience education miss Marty burns.

6

00:01:07.890 --> 00:01:14.400

Kasey Bratcher: joining us to talk about learning loss and the science of reading and how we can tackle learning last with the science of reading today.

7

00:01:14.850 --> 00:01:23.160

Kasey Bratcher: So i'm going to turn everything over to Marty and man, the Q amp a box as well, so if you have questions that pop up throughout we'll save some time at the end.

8

00:01:23.910 --> 00:01:30.540

Kasey Bratcher: To address some of those the common questions that we see you can just post those in the chat and thank you all for joining us today.

9

00:01:31.710 --> 00:01:40.020

Martha Burns: Welcome everyone, and thank you for joining us on tackling the learning loss with the science of reading let's see if we can get the slides to move.

10

00:01:40.800 --> 00:01:50.250

Martha Burns: What i'm going to be stressing today is what we've learned from educational impact of the covert cam pandemic and how we.

11

00:01:51.030 --> 00:02:06.840

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Can and utilize that knowledge to really accelerate the learning of all of your students so First, we want to start with what is the impact of of the pandemic on learning students and, of course, you are all on the front line and that's something that you know.

12

00:02:07.860 --> 00:02:20.790

Martha Burns: very specifically generally, what the research is showing that students spent less time in the learning process during the the online and and.

13

00:02:21.330 --> 00:02:31.530

Martha Burns: hybrid learning models than they would have normally that there are stress symptoms that that some of the students have part that have expressed or shown.

14

00:02:32.190 --> 00:02:41.250

Martha Burns: Some stress in being away from school school of courses are we learning how important all of our educators, are now, which is a good thing.

15

00:02:41.850 --> 00:02:47.490

Martha Burns: But the students feel the stress of not being able to achieve the way they did before, not being able to participate.

16

00:02:47.910 --> 00:03:07.320

Martha Burns: And then certainly changes in the way students interact they don't have the social safety net, that they had before they don't have their friends to after school or even in the classroom to collaborate with, and then we have seen changes in motivation so some of the research.

17

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:03:08.340 --> 00:03:20.220

Martha Burns: That predicted the original predictions of of changes, we might see were based on some research that has been done over the years on, typical.

18

00:03:21.390 --> 00:03:32.130

Martha Burns: Typical learning changes that occur during the summer break, and then what they did is is anticipate where we might be.

19

00:03:32.580 --> 00:03:47.520

Martha Burns: And what you can see, is generally speaking when students have less days and less time learning in general, and when they're away from the classroom what we see is the biggest impact and reading is in the earlier grades.

20

00:03:48.150 --> 00:04:03.510

Martha Burns: Third grade fourth grade sixth grade, the biggest impact in mathematics actually goes, all the way through eighth grade middle school but dramatic drops during any kind of a recess.

21

00:04:04.830 --> 00:04:17.520

Martha Burns: Especially in third grade fourth grade and fifth grade, so what we're going to talk about is, what can we do to accelerate those students and get them all back to where we want them to be.

22

00:04:18.300 --> 00:04:30.450

Martha Burns: We love teaching we all do, and so what we want to do is get back and get the energy back get the motivation back and really and really build these students learning.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

23

00:04:31.230 --> 00:04:38.430

Martha Burns: and make up for any kind of of setback that they may have experienced and to do that i'm going to talk about four.

24

00:04:39.210 --> 00:04:48.660

Martha Burns: Areas first is equity of course we're all worried about and concerned about equity and I think we've all understood and learned from the pandemic that.

25

00:04:49.290 --> 00:04:58.410

Martha Burns: A lot of our students didn't have access to technology for remote learning, they also didn't have access to Internet, even if they had the technology, sometimes.

26

00:04:58.680 --> 00:05:09.720

Martha Burns: So what we want is, we want to make sure now that we have access to technology that we've learned the benefits of technology we've learned how it can augment what we do as educators.

27

00:05:10.680 --> 00:05:23.070

Martha Burns: we've also learned the importance of executive functions and i'll talk about that more later, but what I mean is paying attention being able to attend on demand being able to regulate yourself, which is so important for academic achievement.

28

00:05:23.910 --> 00:05:34.950

Martha Burns: Then we'll talk about engagement I think every single educator out there learned that it's very hard to teach on zoom and i'm trying to do it right now and you're trying to learn right now.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

29

00:05:35.580 --> 00:05:43.050

Martha Burns: And it's much more difficult because you can't see the students faces you can't interact in the direct way you're used to you can't get close to them you can't.

30

00:05:43.740 --> 00:05:54.150

Martha Burns: Have the kind of a personal approach that you usually have and the dynasty ISM that you have in a classroom as well and it's also harder to individualize to each student.

31

00:05:55.170 --> 00:06:02.520

Martha Burns: and maintain their engagement, whereas in in the classroom we can break students into smaller groups, we can work with them individually, etc.

32

00:06:03.180 --> 00:06:14.670

Martha Burns: Then well being is the next bucket we want to look at looking at social emotional needs of the students, the seo work that we've been doing over the last several years emphasis on students.

33

00:06:15.330 --> 00:06:27.540

Martha Burns: Self confidence and learning belief and learning self advocacy that's all still very important in in it's been harder to address those issues again when we don't have the students in our classroom.

34

00:06:27.930 --> 00:06:42.660

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: And of course we want to build confidence and motivation in our students and then, finally, we want to take this experience and be more efficient and everything we do, I think, each of us once really to have a greater impact on our students.

35

00:06:43.620 --> 00:06:52.920

Martha Burns: And, and to utilize this this experience to figure out okay what, how can we have a greater impact, what are the tools, now we can use to.

36

00:06:53.520 --> 00:07:01.620

Martha Burns: augment what we do, I like to say teach smarter not harder and that's really what we're going to talk about and we want that efficiency.

37

00:07:02.370 --> 00:07:11.850

Martha Burns: Not just in the learning in the schedules within school but also summer programs, and after school services as well, so let's start with equity.

38

00:07:12.300 --> 00:07:24.660

Martha Burns: We know that disadvantaged students are capable of achieving at full capacity, we know from lots of experiences and lots of data that when we have everything working.

39

00:07:25.380 --> 00:07:40.080

Martha Burns: In sync having good technology available for our disadvantaged students having access to that technology available having the tools to individualize to their needs, that they do that they do excel.

40

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:07:40.830 --> 00:07:54.180

Martha Burns: But because they had unequal access to resources students of color and low in and from low income households have faced some achievement gaps that are more dramatic than some of the other students, and this was.

41

00:07:54.660 --> 00:08:14.220

Martha Burns: This is a study that came from the Center for education policy analysis from Stanford and you can see that, as you look at the equity distribution, we can really see huge gaps that have occurred, especially in 12th grade math eighth grade math.

42

00:08:15.540 --> 00:08:19.860

Martha Burns: and other kinds of reading if you look kind of in the middle, you can see.

43

00:08:20.580 --> 00:08:31.800

Martha Burns: Differences in 12th grade reading eighth grade reading etc so so we want to address this equity and So what is this learning loss challenge and what can we do.

44

00:08:32.280 --> 00:08:38.130

Martha Burns: And one thing that we know from the science of learning is to emphasize cognitive skills.

45

00:08:38.460 --> 00:08:47.700

Martha Burns: We know that that parents with less education often have less time to spend with their children, so a lot of research has been published on that often they're working two jobs.

46

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:08:48.360 --> 00:08:52.860

Martha Burns: They may be they're trying to get food on the table they're trying, they may have very.

47

00:08:53.400 --> 00:09:04.800

Martha Burns: On on predictable schedules me have one schedule one week one and X, and that means they tend not to fully understand as well how involved, they need to be in the learning process.

48

00:09:05.070 --> 00:09:11.850

Martha Burns: And oftentimes they didn't have parents that were involved in the learning process, so they don't really didn't really have a model.

49

00:09:12.330 --> 00:09:19.680

Martha Burns: We also know that home computer technology is found to improve students achievement, especially if parents understand.

50

00:09:20.040 --> 00:09:31.020

Martha Burns: The productive use of online resources, so I think if there's one bit of knowledge we've gained from this whole pandemic situation it is to help our parents.

51

00:09:31.650 --> 00:09:40.440

Martha Burns: learn to be more productive and understand online resources and utilize online resources where that kind of help for parents is provided.

52

00:09:41.370 --> 00:09:44.160

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: We also know that we talked about.

53

00:09:45.000 --> 00:09:54.690

Martha Burns: The stress that many of our students have experienced over the last year it's very difficult when they can't get together with their friends it's very difficult when the parents feel the pressure.

54

00:09:55.110 --> 00:10:01.890

Martha Burns: of having to make sure the students do their assignments on time in the students are a little frustrated because the parent.

55

00:10:02.370 --> 00:10:19.620

Martha Burns: is supposed to be a parent never teacher and so that's created stress on both sides, and we know from a lot of research that stress is a toxin on learning Now I want to keep in mind for all of us it stress itself isn't bad, this is a wonderful.

56

00:10:20.310 --> 00:10:32.250

Martha Burns: explanation of the effects of stress, but by suppose ski who's also at Stanford from his marvelous book on educational neuroscience and it was titled behave.

57

00:10:32.940 --> 00:10:41.730

Martha Burns: In it was written for just all of us, but he talks about an inverted you in change if if we don't have any stress at all.

58

00:10:42.570 --> 00:10:54.150

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: If we're just sitting around just thinking of a day, where you don't do anything actually what happens is your brain really isn't stimulated and if your brain is stimulated.

59

00:10:54.450 --> 00:11:04.410

Martha Burns: You don't change you don't learn you don't grow to get the brain to be stimulated to change and to grow, which is our goal, obviously, as educators.

60

00:11:05.310 --> 00:11:17.910

Martha Burns: We need we need just a little bit of exposure to stress and that's what school is, if you think about it, there are tests and those are a little stressful their assignments, and those are a little less stressful.

61

00:11:18.870 --> 00:11:25.860

Martha Burns: But if you go too far, if the person is depressed if the students depressed or anxious those two.

62

00:11:26.730 --> 00:11:39.810

Martha Burns: Those two characteristics can then go across and over the curve and and depress learning and when that happens, the students brain is not capable of learning new things.

63

00:11:40.080 --> 00:11:48.660

Martha Burns: So we need the right amount of simulation we need just a little bit of stress, which I think every teacher understands, but not so far that the.

64

00:11:49.650 --> 00:11:56.100

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Child becomes anxious or frustrated or are or feeling defeated or depressed.

65

00:11:56.970 --> 00:12:07.980

Martha Burns: Stress itself also affects the way the brain matures so it doesn't just affect how we learn, but we know, through a lot of research there's a researchers name is jimenez.

66

00:12:08.730 --> 00:12:19.320

Martha Burns: who's been studying the effects of adverse childhood experiences on the development on the brain on academic achievement we have other individuals who've looked at poverty in the brain.

67

00:12:19.890 --> 00:12:29.640

Martha Burns: Kimberly noble, for example, and we know that all of these factors, lead to stress and that slows down the maturation of the brain in general.

68

00:12:29.910 --> 00:12:39.000

Martha Burns: And there's a biology to this and the biology, you know pretty well it's the combination of have to stress hormones, really.

69

00:12:39.930 --> 00:12:51.930

Martha Burns: One that's called one it's cortisol but the the stress hormones come from the adrenal gland in the pituitary gland and they when those are activated when those.

70

00:12:52.770 --> 00:13:02.610

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Those those chemicals are activated in the brain the cortex the part of the brain that learns actually shuts down and it doesn't function and we've all been there.

71

00:13:03.360 --> 00:13:19.860

Martha Burns: we've you know left our keys in the car, because we were stressed, because we were late for something, but what we see in this is the jimenez research with aces adverse childhood experiences is if children have several points of stress in their home.

72

00:13:21.030 --> 00:13:28.140

Martha Burns: There might be points of child maltreatment which human jimenez at all have defined as psychological maltreatment.

73

00:13:28.770 --> 00:13:36.030

Martha Burns: Neglect physical maltreatment sexual and or just household dysfunction a parent, for example.

74

00:13:36.330 --> 00:13:44.340

Martha Burns: A mother who's depressed or their substance use in the home or one of the parents is incarcerated or there may be violence toward the mother.

75

00:13:44.790 --> 00:13:55.470

Martha Burns: If individuals have more than one of these, it really affects learning and you can see that in this class at command as research that was done on a says that.

76

00:13:56.460 --> 00:14:06.510

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: it's almost a linear effect, you can see the light blue is no aces at all children who come from homes, where there aren't any of these adverse childhood experiences.

77

00:14:06.870 --> 00:14:17.100

Martha Burns: And then one aces the darker blue two aces is white and three or more as black and you can see that in this chart language and literacy skills, the teachers say.

78

00:14:17.700 --> 00:14:29.430

Martha Burns: Are impacted by almost 35% meaning those students are 35% more impacted their they're doing more poorly in in the classroom than other students.

79

00:14:30.240 --> 00:14:36.780

Martha Burns: Science and Technology not quite as dramatically, but again, if you look at math you see the same effect that.

80

00:14:37.200 --> 00:14:57.810

Martha Burns: Adverse childhood experiences and again this is due to the association with stress that the child is under really affect the the child's ability to learn and in and achieve in the classroom, and so what experiences have have had the greatest loss during the pandemic.

81

00:14:59.040 --> 00:15:10.530

Martha Burns: And what we found mine, the gap, this was published in an A McKinsey report that covert 19 actually widen the racial disparities and learning so students.

82

00:15:12.510 --> 00:15:26.820

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Some of the students who are very achievement oriented manage the pandemic fairly well, but some of the students who have adverse childhood experiences come from homes of poverty or or have situations in their home where there's a lot of stress.

83

00:15:28.440 --> 00:15:39.360

Martha Burns: they're starting school about three months behind where we would expect them to students of color were about three to five months behind and the picture for reading, although it's a little more positive.

84

00:15:40.260 --> 00:15:50.490

Martha Burns: is still behind historical averages, and in terms of equity again during the pandemic, we have seen that black and Hispanic students.

85

00:15:51.450 --> 00:16:04.860

Martha Burns: were more likely to have been learning totally remotely again often they didn't have some of the resources that would have helped them to learn that way, and we can see that that remote learning then.

86

00:16:05.610 --> 00:16:27.750

Martha Burns: Had a differential effects on on learning so what you see is that in in the spring, that blue circle that you see there you saw that white students didn't have any learning loss but students of color had 12 to 16 months.

87

00:16:28.950 --> 00:16:40.260

Martha Burns: As opposed to the status quo and what we are anticipating and what we want to improve is is where they go from here, what we can do this summer for them.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

88

00:16:40.500 --> 00:16:47.610

Martha Burns: What we can do the rest of the school year we still have a couple of months left what we can do in the summer and then obviously when they get back so.

89

00:16:48.420 --> 00:16:53.550

Martha Burns: Those of those students who have had the greatest gap during the pandemic.

90

00:16:54.510 --> 00:17:06.810

Martha Burns: are also those with the the greater access to remote instruction and so, our goal is to improve remote instruction that's one major goal.

91

00:17:07.110 --> 00:17:24.240

Martha Burns: And I think what one of the major things we've also seen from this as remote instruction can work if the students are motivated if the students know what is expected of them, and if they're getting the kind of help so that they can utilize the remote instruction effectively.

92

00:17:25.380 --> 00:17:29.910

Martha Burns: This was from edutopia this April 2 so just a couple of weeks ago.

93

00:17:31.500 --> 00:17:34.890

Martha Burns: And what they this was a study buys the lazo at all.

94

00:17:35.610 --> 00:17:44.640

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: But when adults support development and then this was adolescence of teens executive function skills during adolescence, it can have a lifelong impact.

95

00:17:44.970 --> 00:18:01.470

Martha Burns: So what we're starting to see is the importance of building in addition to our consideration of content also utilizing remote instruction to build things like attentional skills builds memory skills.

96

00:18:02.190 --> 00:18:11.520

Martha Burns: build the students capacity to advocate for themselves and utilize remote instruction effectively.

97

00:18:12.390 --> 00:18:18.750

Martha Burns: executive function skills you i'm sure you've heard a lot of are very important for life and learning.

98

00:18:19.440 --> 00:18:36.840

Martha Burns: they're not just important for academics, but they are what enabled all of us to be successful in our careers so children who have the opportunities to develop executive function and self regulation skills actually do experience lifelong benefits.

99

00:18:37.590 --> 00:18:42.510

Martha Burns: And there's a huge emphasis now on this that school achievement.

100

00:18:43.650 --> 00:18:52.680

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: really is enhanced if and we if we look at those check marks if students can remember and follow complex, multi step directions.

101

00:18:53.100 --> 00:19:03.390

Martha Burns: If they have attentional control and it can ignore distractions and control impulsive responses and impulsive behaviors that they can sit still is.

102

00:19:03.630 --> 00:19:13.320

Martha Burns: We often would think as an educator adjust when the rules change can the student be flexible and in when they have to do something, a different way, can they do that.

103

00:19:13.620 --> 00:19:20.520

Martha Burns: And they persist it Problem Solving stick with a task and keep working at it and can they manage long term assignments.

104

00:19:21.150 --> 00:19:31.620

Martha Burns: And those are executive function skills, you can find all of this listed at the developing child Harvard EDU website, and you can see report.

105

00:19:32.400 --> 00:19:55.230

Martha Burns: Research by weintraub that shows that that those executive function skills build into the early adult years and and do determine the success both academically and in in later life now with respect to engagement, one of the things we've learned, there was a nice study that was published.

106

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:19:56.730 --> 00:20:10.620

Martha Burns: From leaders of 112 schools around the country who met last year after the first five months of covert changes and their goal was to identify the most important.

107

00:20:11.490 --> 00:20:20.130

Martha Burns: aspects of education, regardless of the delivery model, so it didn't matter whether it was a hybrid model or the students were learning remotely.

108

00:20:20.430 --> 00:20:42.300

Martha Burns: What were those those most successful schools and what they found is that the most successful schools during the last him pandemic or those that put an emphasis on student engagement that is keeping the students involved and utilizing activities remote activities that keep the students.

109

00:20:43.650 --> 00:20:47.640

Martha Burns: Internal interacting actively with the teacher and engage with the teacher.

110

00:20:48.090 --> 00:20:55.320

Martha Burns: The feeling of well being where the students felt I can do this they had confidence that they could do that they felt good about what they did.

111

00:20:55.740 --> 00:21:05.190

Martha Burns: And where they were given constant feedback where they knew did I get this right, did I not get this right, and by the way, one of the advantages of.

112

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:21:06.240 --> 00:21:11.100

Martha Burns: Remote learning and especially if you utilize technological approaches is.

113

00:21:11.430 --> 00:21:19.470

Martha Burns: The better ones are built, so a student gets feedback on every single response that they make, and they are engaged they actually get.

114

00:21:19.710 --> 00:21:27.120

Martha Burns: To ask questions they actually get to have a little sometimes a little tutor bought in there, that will help them to.

115

00:21:27.630 --> 00:21:38.850

Martha Burns: navigate a problem if they're having problems so, so there are adjuncts that we can use that we've learned to use and that we now have the science that shows us that they're effective.

116

00:21:40.440 --> 00:21:53.310

Martha Burns: And can add to what we already do as teachers and get us over this hump that we that we want to get over in the next few months now, that our students are returning so engagement, then.

117

00:21:54.240 --> 00:22:06.660

Martha Burns: is key and that's I think what most of us feel I mean i'm standing here talking to a dodge on my computer screen and I think most of us teachers feel that way when we're doing.

118

00:22:07.350 --> 00:22:18.690

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: When we're doing remote sessions it's hard to keep the students engaged, but there are two simple ways to do it, according to an edge topia article that was published last July.

119

00:22:19.680 --> 00:22:24.870

Martha Burns: One is making lessons interactive and accessible 24 seven.

120

00:22:25.650 --> 00:22:36.150

Martha Burns: The more the students have flexibility, based on their parents schedule, based on their schedule if they can do it at six o'clock at night, if they can do it at eight o'clock at night, if they can do it at 10 in the morning.

121

00:22:36.630 --> 00:22:50.490

Martha Burns: That really improved the outcome of the online instruction and then create opportunities for collaboration, enable the students to work with each other, enable the students to.

122

00:22:51.390 --> 00:22:58.770

Martha Burns: have a goal that they're working toward and they can kind of see how they're moving toward that goal.

123

00:22:59.310 --> 00:23:09.690

Martha Burns: Now there's some interesting research that was published on motivation in the educational neuroscience world by walton and Gray, just a little over a year ago.

124

00:23:10.260 --> 00:23:19.110

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: On what motivates all of us and can we learn from that and I think that it's helpful for us as educators, because.

125

00:23:19.620 --> 00:23:28.410

Martha Burns: We know it well, and we know it in our students, but sometimes it's a little hard to control and I'll explain it briefly, but essentially what this.

126

00:23:28.650 --> 00:23:41.100

Martha Burns: Research shows is that you're motivated to do things when you anticipate a reward so you expect a reward and you can see that in that pink block over on the left.

127

00:23:41.400 --> 00:23:51.030

Martha Burns: If you expect to reward and it's a reward that's meaningful to you now we've always used great so if a student thinks they can get an A or they think they can get a good grade.

128

00:23:51.480 --> 00:24:00.720

Martha Burns: Then they will work harder that gives them incentive, but that is balanced, you can see, the scale in the middle that's balanced against costs.

129

00:24:01.080 --> 00:24:11.760

Martha Burns: What are the cost and the costs are the expected mental and physical effort that's going to go into getting that reward so all of us.

130

00:24:12.240 --> 00:24:23.370

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Have have had various things we've tried to motivate ourselves for its Spring probably a lot of women out there are starting to think about oh i'm going to have to get into shorts i'm going to have to get into summer clothes.

131

00:24:24.330 --> 00:24:36.060

Martha Burns: And maybe one of your goals, would be to to diet and yet you look at the incentive Okay, so I lose five pounds, but she means I can't have all this wonderful food that i've been cooking for myself.

132

00:24:36.780 --> 00:24:46.140

Martha Burns: And it's a balancing act and it's that way for students to so one of the things that we're starting to learn in educational neuroscience.

133

00:24:46.500 --> 00:25:01.050

Martha Burns: Is that grades sometimes are not motivating for students, if they feel like they are not going to get the a and the work that's going to go in to get a B or C just isn't worth it for them so they kind of give up.

134

00:25:01.590 --> 00:25:14.850

Martha Burns: And so what technology experts have learned is that if you build in other motivational devices and teachers can do this, too, and we do it a lot will complement a student will compliment them on their effort.

135

00:25:15.150 --> 00:25:21.990

Martha Burns: will give them points for getting a an assignment in on time, even though it wasn't perfect or that we can see, they put effort into.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

136

00:25:22.770 --> 00:25:31.500

Martha Burns: But with computer technology and technology in general, what they've learned to do is give measured rewards and intermittent rewards.

137

00:25:32.130 --> 00:25:47.790

Martha Burns: That aren't great based but are based in in accomplishing something and well you got that question right good for you now, it took you two tries let's see if you can do it next one, and one try, so that the rewards are a little more modified.

138

00:25:48.750 --> 00:25:59.940

Martha Burns: And and adjusted and individualized to the student, but it keeps the incentive going and to keep some motivation, going so the goal here is to to.

139

00:26:01.050 --> 00:26:09.960

Martha Burns: understand the importance of anticipation of reward to motivation to know that we have these reward circuits in our brain that work for all of us.

140

00:26:11.010 --> 00:26:19.680

Martha Burns: But that we need feedback and we need to feel like we're moving toward a goal of a reward.

141

00:26:20.370 --> 00:26:30.990

Martha Burns: and anticipate that in if we do motivation will stay high and students it's not how hard they have to work if we go back to this chart you can see.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

142

00:26:31.500 --> 00:26:44.640

Martha Burns: that the effort just has to be balanced with the reward so that's where productive struggle comes in and how good do you feel how good the students feel when they've worked really hard on a project worked really hard on a math assignment.

143

00:26:45.300 --> 00:26:49.860

Martha Burns: That was really difficult for them, but they got it and they got it right.

144

00:26:50.550 --> 00:27:06.150

Martha Burns: that's productive struggle and the whole mathematics world has really been looking at how learning itself is reward and we, as we can augment that sense of wow I did this, I solve this problem.

145

00:27:06.480 --> 00:27:15.300

Martha Burns: I was able to read this book, I was able to answer those questions and have that be a reward of its own too so.

146

00:27:15.960 --> 00:27:27.690

Martha Burns: Are there are there ways that we can help you are there ways that the educational neuroscience community in the technology world can help educators, now that we've gone through.

147

00:27:28.050 --> 00:27:36.870

Martha Burns: This period of of remote learning, how can we, as I say, teach smarter instead of harder, how can we.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

148

00:27:37.530 --> 00:27:46.620

Martha Burns: take advantage of what we've learned and build on that and utilize technology, not to teach because it's never going to substitute for a teacher.

149

00:27:46.980 --> 00:27:57.180

Martha Burns: One of the things we know is that we have humans have mirror neurons that really respond to human contact by technology well design technological instruction.

150

00:27:58.200 --> 00:28:10.200

Martha Burns: Can utilize knowledge from gamification so the students feel like they're playing a game, and that they see that there might be a reward of of getting to the next level or achieving.

151

00:28:10.620 --> 00:28:20.430

Martha Burns: Some points that they can view their own progress that the user interfaces themed for them if they're if they're.

152

00:28:20.760 --> 00:28:27.390

Martha Burns: If they're lower grades theme for lower grades of their adolescence, as you see here same brand lessons that they can have.

153

00:28:27.840 --> 00:28:40.860

Martha Burns: Their progress shown to them so they can see how they're moving toward this this reward this goal that they have and that it personalizes and adapts to each student so every student moves at a different pace.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

154

00:28:41.550 --> 00:28:50.790

Martha Burns: that's one of the great advantages of technology and all of that has been shown to increase engagement, then, to increase efficiency.

155

00:28:51.360 --> 00:29:03.210

Martha Burns: Is a student getting feedback every time So is there a dynamic in line intervention if the students have in trouble, a little tutor Bot, or some other cue that the student can get access to.

156

00:29:03.510 --> 00:29:14.370

Martha Burns: That will help them solve a problem if they're having trouble help them read a word if they're having trouble thinking figuring out what the word is and what it means are those kinds of devices available.

157

00:29:15.120 --> 00:29:24.450

Martha Burns: And does the student know immediately, whether they got it right or wrong, so they can okay I didn't get it right that time, but now I know I can get it right next time.

158

00:29:25.350 --> 00:29:31.800

Martha Burns: And they use it independently, so that the parents don't have to be task and drivers in the home.

159

00:29:32.310 --> 00:29:48.510

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: But the students are motivated to use it and it is effective when they use it on their own, will it support any struggling student, in the case of it's if it's reading technology and he's struggling reader if it's mathematics technology is struggling student with math.

160

00:29:49.530 --> 00:30:09.570

Martha Burns: Do they have patented method methods and well research methods that are based on good, solid educational science, with all of that what you end up with and that's what you want to look for if you're looking for technology to augment what you do so, you can teach teach smarter not harder.

161

00:30:10.740 --> 00:30:23.340

Martha Burns: Then you end up with better engagement better equity and efficiency and better effectiveness of outcome, and then you get to teach and the students can.

162

00:30:23.670 --> 00:30:28.590

Martha Burns: do some of these activities on their own to augment what's going on in the classroom.

163

00:30:29.460 --> 00:30:44.100

Martha Burns: Now the other area that pillar we want to address here as well, being the importance of social emotional learning, I sometimes feel like we just keep asking teachers to do more and more and more, you may feel that way too.

164

00:30:45.690 --> 00:30:56.040

Martha Burns: Yes, we have to teach content, now we want to think about social emotional learning, but actually effective teaching and effective learning involve emotion.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

165

00:30:56.760 --> 00:31:03.210

Martha Burns: The part of the brain that remembers your hippocampus is right next door to the part of your brain that.

166

00:31:03.510 --> 00:31:12.630

Martha Burns: That handles emotions it's it's called the amygdala and that part those links are there for a reason, so all of us remember where we were on.

167

00:31:13.080 --> 00:31:19.110

Martha Burns: On days that had huge emotional impact for us like Sep tember 11, for example.

168

00:31:19.770 --> 00:31:23.610

Martha Burns: And we know where we were with other kinds of events and sometimes.

169

00:31:23.850 --> 00:31:36.090

Martha Burns: We can even have a flashbulb memory of those moments, because of the importance of emotion and certainly no one understands that better than educators that's why we keep ourselves energized that's why we work so hard.

170

00:31:36.690 --> 00:31:43.590

Martha Burns: In the classroom to make learning interesting to make it meaningful to make it emotionally relevant to the students.

171

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:31:44.640 --> 00:31:54.150

Martha Burns: But we need to know that there is a mismatch sometimes, especially in the adult adolescent learner between emotion and.

172

00:31:54.810 --> 00:32:08.670

Martha Burns: And their emotional world and their ability to have self control to regulate themselves, and this mismatch you can see here is an excellent article that was written by Jay guide.

173

00:32:09.660 --> 00:32:18.090

Martha Burns: In scientific American and you can access it I think it's \$6 to buy a whole online series of scientific American.

174

00:32:18.420 --> 00:32:31.050

Martha Burns: But what they show you in the adolescent brain here is that area, I was telling you about the limbic system that the little area, the purple area that looks like an almond is the amygdala and the amygdala is actually.

175

00:32:32.010 --> 00:32:37.050

Martha Burns: It means all men and then right behind it is the hippocampus.

176

00:32:37.440 --> 00:32:48.660

Martha Burns: And the hippocampus is is this kind of U shaped structure hippocampus is the file clerk of the brain it's what enables us to remember anything for a long period of time.

177

00:32:49.050 --> 00:32:59.640

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: And the amygdala is the emotional center of our brain, as I said, so those two are linked and that's why we remember things that are emotionally relevant to us, but what happens, you can see down here.

178

00:33:00.660 --> 00:33:09.960

Martha Burns: In an adolescent is the limbic system this emotional memory system is fully mature by about 15 years of age.

179

00:33:10.830 --> 00:33:19.830

Martha Burns: But the part of the brain that regulates the student that keeps them focused that enables them to do productive struggle struggle to.

180

00:33:20.100 --> 00:33:36.930

Martha Burns: enables them to have goals and to set goals and to work toward those goals and not expect an immediate reward every time they do something that part of the brain isn't fully mature into a well into our 20s and so it's a mismatch in adolescence where.

181

00:33:38.010 --> 00:33:50.100

Martha Burns: The emotional the emotional part of a student's brain can literally hijack learning, especially when we're looking at what we call these executive functions.

182

00:33:50.730 --> 00:34:03.210

Martha Burns: The ability to to manage our emotions and that's where self comes in, because from an educational perspective if we have students that.

183

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:34:04.050 --> 00:34:15.690

Martha Burns: feel who lack confidence in the educational process, who don't feel agency, they don't feel like they they know where to go for help, or how to go for help, or when to go for help.

184

00:34:17.010 --> 00:34:22.350

Martha Burns: it's a vital part of classroom instruction and we're starting to understand that and.

185

00:34:22.800 --> 00:34:38.940

Martha Burns: And I think every educator here knows that often for our students, we are their anchor emotionally for many of our students, especially students who come from homes of stress, we are their emotional anchor they trust us.

186

00:34:40.080 --> 00:34:58.650

Martha Burns: and almost well there's a lot of research on this to that individuals who have overcome very stressful childhood or poverty will tell you there was an orphan and a teacher, but it usually it was an adult some adult in the child's life.

187

00:34:59.700 --> 00:35:08.460

Martha Burns: That felt education was important, and that also they felt trusted them and had they had that person support.

188

00:35:08.790 --> 00:35:20.640

Martha Burns: A mentor that the student was able to to work with that got them through, and I think, almost all of us who are educators had that impactful teacher at least one.

189

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:35:20.910 --> 00:35:31.770

Martha Burns: And I know I had a few that just hit tremendous impact on me emotionally and gave me confidence that, yes, I could learn and and gave me skills to learn.

190

00:35:32.580 --> 00:35:45.000

Martha Burns: So, having a positive social emotional and mental health are key components of learning, we have, and this has been around now for almost 10 years the castle model.

191

00:35:45.750 --> 00:35:51.780

Martha Burns: of social competencies that include self management, this is this frontal lobe ability to.

192

00:35:52.080 --> 00:36:02.610

Martha Burns: Have goals and to feel like you can work toward those goals social skills social awareness caring for others, having compassion for others being able to make decisions.

193

00:36:03.360 --> 00:36:20.940

Martha Burns: responsibly being able to build relationships and utilize relationships effectively and being aware of our strengths and and the areas that we need work on and all of us have those social competencies, but there are a central for successful students.

194

00:36:21.960 --> 00:36:31.860

Martha Burns: So leaders around the schools, who have looked at the most successful schools have determined that in the most successful schools teachers administrators.

195

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:36:32.490 --> 00:36:38.850

Martha Burns: Often during this coded period made well being checks for the in the students homes periodically.

196

00:36:39.390 --> 00:36:53.640

Martha Burns: They use mentor group sometimes other students or faculty to generate ideas for service projects for families or communities that needed extra help one example, that was given in the.

197

00:36:54.150 --> 00:37:05.700

Martha Burns: adobe article, and you can see that listed at the bottom in education trends, a team of students, created a tech support hotline for students or families that were struggling with technology issues.

198

00:37:06.810 --> 00:37:16.110

Martha Burns: In in our hybrid learning now in our classrooms where we're doing remote instruction, as well as his face to face instruction.

199

00:37:17.490 --> 00:37:30.000

Martha Burns: We know that connecting this social emotional learning and considering equity is very effective so common social emotional learning strategies also promote equity.

200

00:37:30.630 --> 00:37:43.860

Martha Burns: Enhanced students self awareness and then self awareness becomes a foundational principle for them feeling, yes, I can learn, and I just have as much opportunity to learn as everyone else does.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

201

00:37:44.520 --> 00:37:54.270

Martha Burns: So, again when you're looking for solutions, and I hope you'll start looking for some of the the educational science neuroscience solutions that are out there.

202

00:37:54.630 --> 00:38:04.020

Martha Burns: look for solutions that deliver social emotional learning developments to keep students motivated and engaged in terms of reading.

203

00:38:04.860 --> 00:38:18.600

Martha Burns: What we want is rigorous learning experiences in the in the tech in the ED tech world we don't want them to be games we don't want them, just to be fun, we want them to be designed by scientists.

204

00:38:18.900 --> 00:38:28.500

Martha Burns: To really drive students reading skills and achievement, as well as cognitive skills tension and working memory and goal setting.

205

00:38:29.160 --> 00:38:32.790

Martha Burns: And then, also the social emotional COM competencies.

206

00:38:33.690 --> 00:38:41.400

Martha Burns: Are they designed so that the students it's adapts to the students, so that they're always achieving it never puts them in a situation where they.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

207

00:38:41.670 --> 00:38:46.260

Martha Burns: feel like they're failing if they get something wrong they get to go back to a question they got right.

208

00:38:46.560 --> 00:39:02.730

Martha Burns: And then they get some hints and guides to help them next time they approach the difficult question again so that they keep feeling and moving up it adapts to them, they can manage it, they can ask questions if they need to they can go in for help extra cues if they need to.

209

00:39:03.810 --> 00:39:15.180

Martha Burns: And then, making sure that it is pushing all of the standards that we need to achieve for these students as well, so that we as teachers.

210

00:39:15.780 --> 00:39:23.340

Martha Burns: can address our content we can work with the students on content vigorously, but we can have adjunct.

211

00:39:23.730 --> 00:39:36.480

Martha Burns: edge on technology that can really help us drive those students even further and make more gains when they aren't with us after school and summer programs and other kinds of assistant situations.

212

00:39:37.710 --> 00:39:45.450

Martha Burns: Content consistent non judgmental feedback can enhance self awareness that's Another advantage of our tech, one of the things we've learned with that tech.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

213

00:39:45.900 --> 00:39:51.660

Martha Burns: Is that when students are working on a tablet on their own tablet or on their own.

214

00:39:52.380 --> 00:39:58.530

Martha Burns: computer or whatever the technology devices they're using they don't feel someone standing over them judging.

215

00:39:58.800 --> 00:40:13.020

Martha Burns: And so they don't become as defeated if they make a mistake, especially if the Ad tech has been designed specifically to guide them in an adaptive way with hinson cues and other kinds of.

216

00:40:13.650 --> 00:40:27.330

Martha Burns: devices to keep them moving and then finally make sure when you're choosing scientifically designed on adjunct of technologies that they have research behind them.

217

00:40:28.590 --> 00:40:32.910

Martha Burns: proving and supporting their effectiveness and their efficiency.

218

00:40:34.410 --> 00:40:44.490

Martha Burns: it's not just enough that something looks cute or fun or enjoyable academic success is, as we said is dependent on productive struggle.

219

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:40:44.850 --> 00:41:03.600

Martha Burns: The whole goal of us as teachers is to get students to learn the joy of learning, if you will, and experienced the joy of learning and experience how hard work has its own reward of wow I did it I did it, I read the book I solve the problem.

220

00:41:04.740 --> 00:41:19.830

Martha Burns: So we want to make sure that ED tech is rigorous with high frequency practice that pushes the students not so hard that they feel defeated, but on the other hand, pushes them enough that they're challenged and they feel good about what they've accomplished.

221

00:41:20.580 --> 00:41:29.520

Martha Burns: To do that, the educational technology needs to provide immediate feedback lots of feedback on after every single response a student makes.

222

00:41:29.940 --> 00:41:36.150

Martha Burns: We don't want just workbooks on a computer where the student fills out pages and then doesn't get any feedback.

223

00:41:36.720 --> 00:41:44.070

Martha Burns: For a while we really want it to be interactive so that it's powerful and impactful for the student.

224

00:41:44.610 --> 00:42:00.600

Martha Burns: With real time monitoring touring and the student's ability to see their progress, so what we've learned with technology through the science of learning is that we can achieve mastery.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

225

00:42:01.260 --> 00:42:19.290

Martha Burns: By combining our own inner personal teaching capacities with well designed scientific approaches that are available to us through technology, and I use the acronym of mastery to.

226

00:42:19.650 --> 00:42:29.100

Martha Burns: remind you of those keys that we talked about when you are selecting educational technology, a number one, it needs to be motivating.

227

00:42:29.640 --> 00:42:32.880

Martha Burns: Is it motivating if it's just a workbook on a page.

228

00:42:33.810 --> 00:42:43.380

Martha Burns: that's been put on to a computer and the students seem to get bored easily that's going to be a problem, too, is it adaptive to every suit students so it's individualized saying.

229

00:42:43.770 --> 00:42:59.310

Martha Burns: To each student based on every single response, they make, is it socially safe, so they can work in their own space someone else can work in their space and they they aren't comparing themselves looking over saying wow she's on page 45 and i'm only on page 10.

230

00:43:00.360 --> 00:43:07.050

Martha Burns: can't do they feel like they're progressing well in their own worlds in a safe way that's one of the advantages of technology.

231

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:43:07.350 --> 00:43:15.270

Martha Burns: Does it train lots of skills simultaneously as training attention as a training memory skills, is it also training.

232

00:43:16.110 --> 00:43:22.260

Martha Burns: The content that you want to cover and addressing the standards that you the the curriculum standards.

233

00:43:22.620 --> 00:43:33.480

Martha Burns: Is it effortful is it intentional do they have to work at it it's not just a game in is it rigorous and is are they getting lots of practice in a short period of time.

234

00:43:33.930 --> 00:43:45.030

Martha Burns: If all of that is intact the why of the mystery is it will yield rapid and robust in this case reading skills, it can happen with math as well.

235

00:43:45.960 --> 00:43:53.430

Martha Burns: And in some of the well designed neural science interventions increase processing speed improve decoding.

236

00:43:53.790 --> 00:44:02.760

Martha Burns: blink of an eye rapid automatic recognition for reading fluency and facility with decoding then frees up the cognitive resources.

237

00:44:03.030 --> 00:44:09.690

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: So the students can focus on the meaning of what they're reading and read a science textbook and read a history textbook.

238

00:44:10.020 --> 00:44:16.680

Martha Burns: and read a mathematical textbook or math problem, and now you have to focus on the act of reading itself.

239

00:44:17.250 --> 00:44:27.300

Martha Burns: Now the program one program that's Carnegie learning provides is called fast forward, and we have a lot of evidence over 23 years.

240

00:44:28.080 --> 00:44:40.920

Martha Burns: That when students utilize the fast forward reading interventions and supplemental programs that we not only see improvements in reading, but we actually see.

241

00:44:41.580 --> 00:44:49.260

Martha Burns: That children in that middle picture that had impaired reading before they started and their brains just weren't.

242

00:44:49.830 --> 00:45:01.710

Martha Burns: lighting up in the way that a good reader lights up after just a few weeks of intervention if it's really powerful and really strong the brain, we can actually see differences.

243

00:45:02.490 --> 00:45:23.910

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: In the way the the students are using their brain and you can see what I love to say teachers change brains, but good interventions and good supplementary approaches and good technology changes brains as well, we have a powerful impact on the human brain when we can utilize.

244

00:45:25.320 --> 00:45:35.790

Martha Burns: programs that augment what we do in the classroom and enable that individualized adaptive intensive instruction the research evidence, with the fast forward Program.

245

00:45:36.120 --> 00:45:44.520

Martha Burns: has shown fast lasting results as a longitudinal study in a high poverty school district in Louisiana.

246

00:45:45.210 --> 00:45:56.940

Martha Burns: And you can see, when they use the fast forward and then added an assistive reading program called reading assistant, that the orange line which was below the state average at the beginning of 2006.

247

00:45:57.540 --> 00:46:09.060

Martha Burns: By the time we got to 2016 they had gone way beyond the state average, even though the state average itself has improved, and if you improve learning.

248

00:46:09.390 --> 00:46:25.440

Martha Burns: across these capacities it, it affects all subjects, so the students can read math problems and solve them, they can read their science, so what you can see here is the English language arts scores also went up in that Parish, you can see that science.

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

249

00:46:26.100 --> 00:46:34.650

Martha Burns: Standards scores went up, you can see their mathematical high stakes testing scores went up, and so did their social studies and for secondary level students.

250

00:46:35.010 --> 00:46:48.960

Martha Burns: The outcomes can be documented as well well designed neuroscience technology enhances learning through mastery an example of one of the Carnegie learning secondary programs is.

251

00:46:49.980 --> 00:47:00.120

Martha Burns: called Maffia that Carnegie learning produces and it's a combination of technological exercises that go along with textbooks.

252

00:47:00.690 --> 00:47:18.570

Martha Burns: That are aligned with standards for teaching everything, including algebra and geometry, and all of the aspects of high school math that are so important they're all of these have been well researched all of these have been well studied to.

253

00:47:19.830 --> 00:47:29.520

Martha Burns: To get further information or to register for the next webinar there's a link here the next webinar is going to be may 20 25th.

254

00:47:29.790 --> 00:47:40.560

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: And right now what we'd like to know is how did we do so you can provide us with feedback and suggestions and also, I will take any questions if they came up during the.

255

00:47:40.950 --> 00:47:52.770

Kasey Bratcher: yeah we did actually have one question already so thank you so much for sharing and you want to stick around for Q amp or you have a question, you can post it in the Q amp a we would love for you to take these last few minutes to fill out the survey, to give us some feedback.

256

00:47:53.700 --> 00:48:04.350

Kasey Bratcher: Our next webinar a sneak peek is going to be a conversation with some district leaders across the US around how we can capitalize on what we've learned this year and.

257

00:48:04.860 --> 00:48:07.830

Kasey Bratcher: utilize some of those lessons learned moving into next year.

258

00:48:08.250 --> 00:48:18.360

Kasey Bratcher: as well, so we're excited about that um final details are coming on that very soon, but please take a minute, there is a link in the chat to fill out the survey and.

259

00:48:18.660 --> 00:48:29.940

Kasey Bratcher: In the meantime Marty here's one of the questions that popped up she's This is all and she said Have you considered how children learn visually and what is the effect on literacy around that.

260

00:48:30.960 --> 00:48:39.330

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

Martha Burns: Okay there there's a tremendous amount of research i'm sure you're probably aware of it with with the impact of auditory.

261

00:48:40.620 --> 00:48:56.760

Martha Burns: capacities auditory attention auditory working memory auditory processing speed, on reading because in an alphabetic language, as you well know, you have to decode and so audit and you have to perceive this the difference between a.

262

00:48:58.320 --> 00:49:06.270

Martha Burns: If you're going to be able to figure out which letter goes with which but they're all you also have to be able to do two things you have to recognize the letters.

263

00:49:06.720 --> 00:49:13.020

Martha Burns: and recall the letters and recall the sounds of go with the letters and you also have to be able to track from left to right.

264

00:49:13.440 --> 00:49:28.020

Martha Burns: And there has been research on that and, by the way the fast forward program has exercises built in that actually exercise not only auditory skills, but visual skills there's tasks in in a couple of the reading.

265

00:49:29.250 --> 00:49:37.950

Martha Burns: components of fast forward where students have to track from left to right as words cross the page from left to right, and they have to hold in mind.

266

CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:49:38.280 --> 00:49:56.700

Martha Burns: A word that they see or hear and then, as other words cross the page, they have to hold that in mind, and then maintain their attention and click it on, so in that is based on some of the research on the importance of visual processing, as well as auditory processing so excellent question.

267

00:49:57.990 --> 00:50:07.140

Kasey Bratcher: Well, that and that's all the questions, nobody else posted anything else in the question, so you must have just been so thorough that you already answered all the questions before they can even ask them Marty.

268

00:50:07.470 --> 00:50:22.230

Kasey Bratcher: Thank you so much for joining us today Thank you all very much for attending please take a minute to fill out the survey and we will be you can look for an email from us in a few days with the recording and then a link to also register for our next webinar for for me as well.

269

00:50:23.280 --> 00:50:24.750

Kasey Bratcher: So thank you so much, thank you Marty.

270

00:50:25.170 --> 00:50:26.070

Martha Burns: Thank you.

271

00:50:26.850 --> 00:50:28.020

Kasey Bratcher: y'all have a great afternoon.

272



CARNEGIE LEARNING

RESHAPING EDUCATION WEBINAR

00:50:28.380 --> 00:50:29.100

Martha Burns: You too.