1

00:00:04,660 --> 00:00:09,530

model two current approaches to reading

2

00:00:07,430 --> 00:00:12,350

instruction why many learners still

3

00:00:09,530 --> 00:00:17,570

struggle session three visual memory

4

00:00:12,350 --> 00:00:20,030

theory of reading hello this is David

5

00:00:17,570 --> 00:00:21,769

Kilpatrick your presenter for this

6

00:00:20,030 --> 00:00:24,349

series of webinars and in this series of

7

00:00:21,769 --> 00:00:25,970

webinars participants will learn about

8

00:00:24,349 --> 00:00:29,029

the current research and how it applies

9

00:00:25,970 --> 00:00:33,290

to assessing preventing and overcoming

10

00:00:29,029 --> 00:00:37,160

reading difficulties we're now in the

11

00:00:33,290 --> 00:00:38,840

middle of module 2 and module 2 contains

12

00:00:37,160 --> 00:00:40,730

five sessions this session is going to

13

00:00:38,840 --> 00:00:45,559

be on the visual memory theory of

14

00:00:40,730 --> 00:00:47,949

reading in this session participants

15

00:00:45,559 --> 00:00:50,210

will learn how to define sight words

16

00:00:47,949 --> 00:00:51,770

they'll also learn to describe the

17

00:00:50,210 --> 00:00:54,680

classic whole word or sight word

18

00:00:51,770 --> 00:00:56,629

teaching approach and will be able to

19

00:00:54,680 --> 00:00:58,940

examine the strongly intuitive notion

20

00:00:56,629 --> 00:01:04,190

that somehow we remember words based on

21

00:00:58,940 --> 00:01:05,870

visual memory in education there have

22

00:01:04,190 --> 00:01:07,520

been at least four uses of the word

23

00:01:05,870 --> 00:01:10,250

sight word at least four that I've come

24

00:01:07,520 --> 00:01:13,250

across the one you don't see quite as

25

00:01:10,250 --> 00:01:14,960

often is another term for the classic

26

00:01:13,250 --> 00:01:18,500

whole word reading approach that was

27

00:01:14,960 --> 00:01:20,299

talked about in an earlier session very

28

00:01:18,500 --> 00:01:22,280

often schools the term sight word is

29

00:01:20,299 --> 00:01:23,869

used to refer to high frequency words

30

00:01:22,280 --> 00:01:26,479

the kind of words they learned early on

31

00:01:23,869 --> 00:01:28,009

in one's reading experience in

32

00:01:26,479 --> 00:01:32,150

kindergarten first grade maybe Dolch

33

00:01:28,009 --> 00:01:33,649

words like you see there also

34

00:01:32,150 --> 00:01:35,840

the term sight word is often used to

35

00:01:33,649 --> 00:01:37,369

refer to a phonically irregular word a

36

00:01:35,840 --> 00:01:40,240

word you can't sound out so you just

37

00:01:37,369 --> 00:01:42,740

have to quote-unquote learn it on-site

38

00:01:40,240 --> 00:01:45,350

but there's a fourth definition and that

39

00:01:42,740 --> 00:01:47,869

is a sight word can refer to any

40

00:01:45,350 --> 00:01:50,390

familiar or instantly recognizable word

41

00:01:47,869 --> 00:01:53,270

regardless of its phonic regularity or

42

00:01:50,390 --> 00:01:55,790

how common or uncommon it is these are

43

00:01:53,270 --> 00:01:57,740

the words that are the basis for what

44

00:01:55,790 --> 00:01:59,810

educators referred to as sight word

45

00:01:57,740 --> 00:02:02,000

vocabulary so a sight word vocabulary

46

00:01:59,810 --> 00:02:03,619

refers to all the words a person already

47

00:02:02,000 --> 00:02:08,780

knows they don't have to sound them out

48

00:02:03,619 --> 00:02:10,789

they don't have to guess researchers

49

00:02:08,780 --> 00:02:13,150

only use that fourth definition and

50

00:02:10,789 --> 00:02:16,070

that's the point of reference between

51

00:02:13,150 --> 00:02:17,930

how it's used in an educational context

52

00:02:16,070 --> 00:02:20,989

and how it's used by reading researchers

53

00:02:17,930 --> 00:02:23,239

so a sight word is any written word that

54

00:02:20,989 --> 00:02:25,610

is well established in memory so that it

55

00:02:23,239 --> 00:02:28,400

is automatically recognizable no

56

00:02:25,610 --> 00:02:29,959

guessing no sounding it out it doesn't

57

00:02:28,400 --> 00:02:31,790

matter if it's phonically regular or

58

00:02:29,959 --> 00:02:33,590

phonically irregular if it's high frequency

59

00:02:31,790 --> 00:02:34,670

low frequency if it's something you

60

00:02:33,590 --> 00:02:35,629

learned in kindergarten if it's

61

00:02:34,670 --> 00:02:37,579

something you learned just a couple

62

00:02:35,629 --> 00:02:40,189

weeks ago and and you saw it a few times

63

00:02:37,579 --> 00:02:41,870

and now you know it it is important to

64

00:02:40,189 --> 00:02:45,470

realize that throughout these webinar

65

00:02:41,870 --> 00:02:48,799

sessions this is the only definition of

66

00:02:45,470 --> 00:02:51,190

sight word that we will be using so a

67

00:02:48,799 --> 00:02:53,930

sight vocabulary as mentioned refers to

68

00:02:51,190 --> 00:02:56,930

the pool of words that are instantly

69

00:02:53,930 --> 00:02:59,510

familiar instantly accessible that

70

00:02:56,930 --> 00:03:02,139

automatically come to mind when a person

71

00:02:59,510 --> 00:03:04,189

sees a word they're recognizable

72

00:03:02,139 --> 00:03:05,870

researchers have another term for this

73

00:03:04,189 --> 00:03:07,760

that they use interchangeably with sight

74

00:03:05,870 --> 00:03:11,659

word vocabulary and that is the term

75

00:03:07,760 --> 00:03:13,879

orthographic lexicon now intuition

76

00:03:11,659 --> 00:03:15,799

suggests to us that if we look at a

77

00:03:13,879 --> 00:03:17,689

chair and say chair or we look at the

78

00:03:15,799 --> 00:03:19,819

printed word chair and say chair that

79

00:03:17,689 --> 00:03:22,250

it's the same mental process in both

80

00:03:19,819 --> 00:03:25,639

cases you have visual input and verbal

81

00:03:22,250 --> 00:03:27,230

output the classic whole word method

82

00:03:25,639 --> 00:03:29,180

appears to be based on this assumption

83

00:03:27,230 --> 00:03:33,230

the idea is that you give multiple

84

00:03:29,180 --> 00:03:35,769

repetitions and that you allow kids to

85

00:03:33,230 --> 00:03:39,349

make a particular word visually

86

00:03:35,769 --> 00:03:40,879

recognizable however this approach turns

87

00:03:39,349 --> 00:03:42,590

out to be very inefficient for weak

88

00:03:40,879 --> 00:03:45,109

readers because as you will see shortly

89

00:03:42,590 --> 00:03:48,169

it is not how we actually remember words

90

00:03:45,109 --> 00:03:50,030

so if we use an approach that is based

91

00:03:48,169 --> 00:03:53,379

on a faulty assumption we're not really

92

00:03:50,030 --> 00:03:56,780

addressing the needs of a weak reader

93

00:03:53,379 --> 00:03:58,639

science in many different ways as you

94

00:03:56,780 --> 00:04:01,819

will see has shown us that our

95

00:03:58,639 --> 00:04:03,409

intuitions fail us here the intuition of

96

00:04:01,819 --> 00:04:05,030

looking at a cat and saying cat or

97

00:04:03,409 --> 00:04:07,579

looking at the word cat and saying cat

98

00:04:05,030 --> 00:04:09,829

are part of the same process is a faulty

99

00:04:07,579 --> 00:04:13,340

intuition that's clearly not what's

100

00:04:09,829 --> 00:04:15,590

going on there been multiple independent

101

00:04:13,340 --> 00:04:18,500

lines of research to show that reading

102

00:04:15,590 --> 00:04:20,000

is not based on visual memory I think

103

00:04:18,500 --> 00:04:21,650

it'll become pretty clear as you see

104

00:04:20,000 --> 00:04:24,139

some of these items some of the lines of

105

00:04:21,650 --> 00:04:26,570

research involve high-tech neuroimaging

106

00:04:24,139 --> 00:04:30,070

others can involve things that we

107

00:04:26,570 --> 00:04:30,070

experience on a day-to-day basis

108

00:04:30,680 --> 00:04:35,870

so here's the first of a series of

109

00:04:33,770 --> 00:04:37,699

problems with the idea that when we look

110

00:04:35,870 --> 00:04:39,139

at words on a page that we're

111

00:04:37,699 --> 00:04:41,780

remembering them based on some sort of

112

00:04:39,139 --> 00:04:43,639

visual memory process first of all we

113

00:04:41,780 --> 00:04:46,639

have to recognize that input and storage

114

00:04:43,639 --> 00:04:48,020

are not the same thing those of you that

115

00:04:46,639 --> 00:04:50,720

are old enough to remember looking up

116

00:04:48,020 --> 00:04:52,580

telephone numbers in a phone book what

117

00:04:50,720 --> 00:04:54,770

did we do we looked at the number

118

00:04:52,580 --> 00:04:56,840

visually but then we translated it out

119

00:04:54,770 --> 00:04:59,150

of visual and we repeated in our head so

120

00:04:56,840 --> 00:05:00,919

it became auditory or phonological then

121

00:04:59,150 --> 00:05:04,940

we transferred it back to the visual as

122

00:05:00,919 --> 00:05:08,210

we typed it into the keypad so that

123

00:05:04,940 --> 00:05:10,910

illustrates that input and storage are

124

00:05:08,210 --> 00:05:12,650

not the same thing now that has to do

125

00:05:10,910 --> 00:05:15,020

with working memory but it's also true

126

00:05:12,650 --> 00:05:16,910

for long-term memory as it turns out we

127

00:05:15,020 --> 00:05:19,580

now know that the storage of written

128

00:05:16,910 --> 00:05:21,889

words is orthographic phonological and

129

00:05:19,580 --> 00:05:23,660

semantic primarily orthographic this

130

00:05:21,889 --> 00:05:26,080

will become even more clear in module

131

00:05:23,660 --> 00:05:29,180

four but basically storage

132

00:05:26,080 --> 00:05:33,199

orthographically means that the actual

133

00:05:29,180 --> 00:05:36,889

sequence of letters is recalled not the

134

00:05:33,199 --> 00:05:39,500

look of the word back in 1886 in a

135

00:05:36,889 --> 00:05:41,510

psychology journal a new timing device

136

00:05:39,500 --> 00:05:43,280

was introduced that could get reaction

137

00:05:41,510 --> 00:05:44,990

time down to one one thousandth of a

138

00:05:43,280 --> 00:05:48,139

second that's called a millisecond and

139

00:05:44,990 --> 00:05:49,789

with timing that precise this particular

140

00:05:48,139 --> 00:05:52,340

researcher found something he did not

141

00:05:49,789 --> 00:05:55,820

expect and he could not explain he found

142

00:05:52,340 --> 00:05:57,880

that people reacted more quickly to a

143

00:05:55,820 --> 00:06:00,139

printed word than to the actual object

144

00:05:57,880 --> 00:06:03,710

that seems to go against our intuition

145

00:06:00,139 --> 00:06:05,870

so here we had back in 1886 a bit of

146

00:06:03,710 --> 00:06:08,300

data that was inconsistent with the idea

147

00:06:05,870 --> 00:06:11,000

that we remember words based on visual

148

00:06:08,300 --> 00:06:13,190

memory so Cattell’s finding which has

149

00:06:11,000 --> 00:06:14,990

been replicated since then is that

150

00:06:13,190 --> 00:06:17,270

reading words and naming objects have

151

00:06:14,990 --> 00:06:20,330

different reaction times and presumably

152

00:06:17,270 --> 00:06:23,150

involve different mental processes in

153

00:06:20,330 --> 00:06:25,479

the 1970s it was determined that

154

00:06:23,150 --> 00:06:29,210

students had had poor memory for words

155

00:06:25,479 --> 00:06:31,099

had perfectly normal visual memory some

156

00:06:29,210 --> 00:06:32,900

children that were poor readers had good

157

00:06:31,099 --> 00:06:34,880

visual memory some had poor visual

158

00:06:32,900 --> 00:06:36,919

memory but also children who were

159

00:06:34,880 --> 00:06:38,599

skilled readers some had poor visual

160

00:06:36,919 --> 00:06:40,789

memory and some had good visual memory

161

00:06:38,599 --> 00:06:44,300

so the visual memory did not seem to

162

00:06:40,789 --> 00:06:45,830

play into how good you were at reading

163

00:06:44,300 --> 00:06:48,320

basically in studies that looked at

164

00:06:45,830 --> 00:06:50,000

large groups of children they found that

165

00:06:48,320 --> 00:06:52,300

the correlation between word reading and

166

00:06:50,000 --> 00:06:55,790

visual memory was pretty close to zero

167

00:06:52,300 --> 00:06:58,610

from the 1960s and 80s right through til

168

00:06:55,790 --> 00:07:00,410

today researchers have used mixed case

169

00:06:58,610 --> 00:07:03,020

words in order to study reading

170

00:07:00,410 --> 00:07:05,930

processes and the idea of using a mixed

171

00:07:03,020 --> 00:07:07,730

case word suggests that an individual

172

00:07:05,930 --> 00:07:10,760

has never seen this word printed that

173

00:07:07,730 --> 00:07:12,290

way because it's so unusual what is

174

00:07:10,760 --> 00:07:14,030

interesting is that if you flash a word

175

00:07:12,290 --> 00:07:16,970

on a screen for one twentieth of a

176

00:07:14,030 --> 00:07:19,430

second follow it by a bunch of X's or

177

00:07:16,970 --> 00:07:21,590

hash tags in the same position that the

178

00:07:19,430 --> 00:07:23,630

letters were in to cancel out any after

179

00:07:21,590 --> 00:07:25,610

image on your retina we can still read

180

00:07:23,630 --> 00:07:27,980

those words but when that goes that

181

00:07:25,610 --> 00:07:30,320

quickly we don't even notice whether

182

00:07:27,980 --> 00:07:33,500

they're uppercase lowercase or mixed

183

00:07:30,320 --> 00:07:36,110

case and Marilyn Jagger Adams describes

184

00:07:33,500 --> 00:07:38,240

him one of her studies that when she

185

00:07:36,110 --> 00:07:41,030

debriefed students afterwards these were

186

00:07:38,240 --> 00:07:42,380

college students and explained to them

187

00:07:41,030 --> 00:07:43,820

that some of the words that were flashed

188

00:07:42,380 --> 00:07:45,800

that quickly were uppercase some were

189

00:07:43,820 --> 00:07:47,810

lowercase in summer mixed case most of

190

00:07:45,800 --> 00:07:49,460

the students didn't even realize the

191

00:07:47,810 --> 00:07:51,890

difference and some of the students even

192

00:07:49,460 --> 00:07:53,810

debated her and said that all of the

193

00:07:51,890 --> 00:07:58,010

words that they had seen were in the

194

00:07:53,810 --> 00:08:00,620

normal lowercase print back when I first

195

00:07:58,010 --> 00:08:04,700

read about this research in about 1997

196

00:08:00,620 --> 00:08:06,890

or 1998 my second son was seven years

197

00:08:04,700 --> 00:08:08,780

old a good reader at the end of second

198

00:08:06,890 --> 00:08:10,970

grade and we used to read Berenstein

199

00:08:08,780 --> 00:08:12,590

bear books well one night for the very

200

00:08:10,970 --> 00:08:13,670

first time he read a Calvin and Hobbes

201

00:08:12,590 --> 00:08:16,850

books we had borrowed from my

202

00:08:13,670 --> 00:08:18,470

brother-in-law my son and none of my

203

00:08:16,850 --> 00:08:20,990

kids had ever been exposed to comic

204

00:08:18,470 --> 00:08:22,580

strips comic books and yet he was able

205

00:08:20,990 --> 00:08:24,830

to read the Calvin and Hobbes book as

206

00:08:22,580 --> 00:08:26,840

easily and fluently as he was reading a

207

00:08:24,830 --> 00:08:28,940

Berenstein Bear chapter book take a

208

00:08:26,840 --> 00:08:31,820

look at the comic strip page they're

209

00:08:28,940 --> 00:08:34,070

all written in all caps there's no way

210

00:08:31,820 --> 00:08:35,810

that my son had seen all those words in

211

00:08:34,070 --> 00:08:38,240

all caps that allowed him to quickly and

212

00:08:35,810 --> 00:08:40,040

fluently identify those words he was

213

00:08:38,240 --> 00:08:42,650

recalling words based upon their

214

00:08:40,040 --> 00:08:44,090

orthographic sequence not based upon the

215

00:08:42,650 --> 00:08:45,740

look of the word and as you know the

216

00:08:44,090 --> 00:08:48,560

uppercase version of the word looks very

217

00:08:45,740 --> 00:08:50,390

different than the lowercase so

218

00:08:48,560 --> 00:08:52,550

therefore if a first grader learns the

219

00:08:50,390 --> 00:08:54,500

word bear of course a bear is a very

220

00:08:52,550 --> 00:08:56,420

common character in children's stories

221

00:08:54,500 --> 00:08:58,040

after learning that word to the point

222

00:08:56,420 --> 00:08:59,870

where it jumps out at

223

00:08:58,040 --> 00:09:01,700

instantly then if he's presented with

224

00:08:59,870 --> 00:09:04,070

bear an upper case it also jumps out

225

00:09:01,700 --> 00:09:06,770

instantly why because it's the same

226

00:09:04,070 --> 00:09:09,290

sequence take a look at all the letters

227

00:09:06,770 --> 00:09:13,330

in bear now one of the lowercase letters

228

00:09:09,290 --> 00:09:15,590

looks like it's uppercase version

229

00:09:13,330 --> 00:09:17,450

researchers have indicated that we have

230

00:09:15,590 --> 00:09:19,610

an abstract representation of every

231

00:09:17,450 --> 00:09:21,800

letter based upon our experiences in

232

00:09:19,610 --> 00:09:24,110

kindergarten first grade and beyond our

233

00:09:21,800 --> 00:09:26,030

memory system instantly categorizes

234

00:09:24,110 --> 00:09:28,430

things every time you look at a chair of

235

00:09:26,030 --> 00:09:29,900

a sort that you hadn't seen before you

236

00:09:28,430 --> 00:09:32,450

don't try to figure out what it is you

237

00:09:29,900 --> 00:09:34,550

instantly identify it as a chair the

238

00:09:32,450 --> 00:09:35,960

same is true for dogs and just about

239

00:09:34,550 --> 00:09:38,570

everything else that you could imagine

240

00:09:35,960 --> 00:09:40,340

that we could categorize in the same way

241

00:09:38,570 --> 00:09:42,740

our brain categorizes different

242

00:09:40,340 --> 00:09:44,870

presentations of different letters when

243

00:09:42,740 --> 00:09:46,430

you consider all the ways that a is

244

00:09:44,870 --> 00:09:48,590

represented in its uppercase or

245

00:09:46,430 --> 00:09:50,630

lowercase between different types of

246

00:09:48,590 --> 00:09:52,970

fonts between different types of

247

00:09:50,630 --> 00:09:56,090

handwriting you'll know that there's a

248

00:09:52,970 --> 00:09:58,070

wide range of visual input but they

249

00:09:56,090 --> 00:10:00,800

immediately get categorized as the

250

00:09:58,070 --> 00:10:02,900

letter A so once we see a letter

251

00:10:00,800 --> 00:10:05,930

regardless of the way it is written

252

00:10:02,900 --> 00:10:09,470

visually we instantly recognize it as

253

00:10:05,930 --> 00:10:12,290

the letter A and then our brain starts

254

00:10:09,470 --> 00:10:13,790

searching for a series of letters that

255

00:10:12,290 --> 00:10:16,250

matches the word that we're looking at

256

00:10:13,790 --> 00:10:17,720

not the visual look of the word think

257

00:10:16,250 --> 00:10:20,300

about all the different fonts that we

258

00:10:17,720 --> 00:10:22,790

read different personal handwriting as

259

00:10:20,300 --> 00:10:25,520

long as the letters are legible we can

260

00:10:22,790 --> 00:10:26,690

read just about anything regardless of

261

00:10:25,520 --> 00:10:29,120

whether or not we had seen that

262

00:10:26,690 --> 00:10:30,650

particular font before if the font is so

263

00:10:29,120 --> 00:10:31,820

unusual you can't make out some of the

264

00:10:30,650 --> 00:10:33,680

letters of course you're gonna struggle

265

00:10:31,820 --> 00:10:36,230

in reading it but once you know what

266

00:10:33,680 --> 00:10:38,800

those letters are you can read the words

267

00:10:36,230 --> 00:10:41,990

regardless of the look of the word

268

00:10:38,800 --> 00:10:44,180

another important problem with the idea

269

00:10:41,990 --> 00:10:46,340

that we remember words based on visual

270

00:10:44,180 --> 00:10:48,740

memory is the fact that word reading

271

00:10:46,340 --> 00:10:51,560

skills correlate moderately too strongly

272

00:10:48,740 --> 00:10:53,570

with phonological awareness yet the

273

00:10:51,560 --> 00:10:56,150

correlation between word reading and

274

00:10:53,570 --> 00:10:59,060

visual memory as we mentioned before is

275

00:10:56,150 --> 00:11:00,620

very weak did you ever notice how you'll

276

00:10:59,060 --> 00:11:02,930

block on the name of somebody you're

277

00:11:00,620 --> 00:11:04,460

walking down the hallway where you work

278

00:11:02,930 --> 00:11:06,680

and you see someone you've known and you

279

00:11:04,460 --> 00:11:08,030

block on their name they greet you with

280

00:11:06,680 --> 00:11:09,600

your name and you're embarrassed to only

281

00:11:08,030 --> 00:11:11,490

greet them with a good morning

282

00:11:09,600 --> 00:11:13,259

but did you ever notice you never have

283

00:11:11,490 --> 00:11:14,370

that same problem with words in other

284

00:11:13,259 --> 00:11:17,069

words you don't look at a word that

285

00:11:14,370 --> 00:11:18,420

you've known for a while and kind of try

286

00:11:17,069 --> 00:11:21,509

to figure it out it jumps out at you

287

00:11:18,420 --> 00:11:23,940

instantly so even there that suggests

288

00:11:21,509 --> 00:11:27,660

that the naming of people and objects is

289

00:11:23,940 --> 00:11:29,269

not the same as the naming of words but

290

00:11:27,660 --> 00:11:32,250

I do want to emphasize here that

291

00:11:29,269 --> 00:11:34,380

forgetting somebody's name is not really

292

00:11:32,250 --> 00:11:36,690

a visual memory problem it is a

293

00:11:34,380 --> 00:11:38,370

phonological retrieval problem it would

294

00:11:36,690 --> 00:11:39,600

be a visual memory if a colleague of

295

00:11:38,370 --> 00:11:41,370

yours that you've known for years walks

296

00:11:39,600 --> 00:11:42,810

down the hall and you look straight at

297

00:11:41,370 --> 00:11:44,160

them and they look like you've never

298

00:11:42,810 --> 00:11:46,110

seen them before in your life that would

299

00:11:44,160 --> 00:11:47,990

be a visual memory failure and the

300

00:11:46,110 --> 00:11:50,370

reason I mention this is because

301

00:11:47,990 --> 00:11:52,680

research suggests that it is the

302

00:11:50,370 --> 00:11:55,440

phonological element of the visual

303

00:11:52,680 --> 00:11:58,769

phonological paired associate learning

304

00:11:55,440 --> 00:12:01,350

that goes into letter naming letter

305

00:11:58,769 --> 00:12:02,850

sounds and letter names that is tends to

306

00:12:01,350 --> 00:12:05,029

be the problem so it's the it's the

307

00:12:02,850 --> 00:12:07,199

phonological part not the visual part in

308

00:12:05,029 --> 00:12:09,420

other words you see a child that looks

309

00:12:07,199 --> 00:12:11,790

at a letter L and starts making the

310

00:12:09,420 --> 00:12:13,949

sound for a T that doesn't mean that

311

00:12:11,790 --> 00:12:16,050

child has visual distortions it means

312

00:12:13,949 --> 00:12:17,850

that he's recalling an incorrect

313

00:12:16,050 --> 00:12:21,360

phonological memory for that particular

314

00:12:17,850 --> 00:12:23,160

letter the average reading level of a

315

00:12:21,360 --> 00:12:24,899

child graduating high school who is deaf

316

00:12:23,160 --> 00:12:27,750

is about a third grade reading level

317

00:12:24,899 --> 00:12:30,149

this is very difficult to understand if

318

00:12:27,750 --> 00:12:32,040

word reading was based on visual memory

319

00:12:30,149 --> 00:12:34,139

because individuals who are deaf have

320

00:12:32,040 --> 00:12:37,410

just as good a visual memory as those

321

00:12:34,139 --> 00:12:39,720

who are hearing so if word reading is

322

00:12:37,410 --> 00:12:41,490

based on visual memory then individuals

323

00:12:39,720 --> 00:12:43,649

who are deaf wouldn't really struggle in

324

00:12:41,490 --> 00:12:45,899

reading in the same way that they do but

325

00:12:43,649 --> 00:12:48,959

as you see we go back up to the top

326

00:12:45,899 --> 00:12:50,699

bullet reading is based on phonology

327

00:12:48,959 --> 00:12:52,589

and that is where their disability lies

328

00:12:50,699 --> 00:12:53,970

they're not hearing the speech stream

329

00:12:52,589 --> 00:12:57,980

and there are hearing the individual

330

00:12:53,970 --> 00:12:57,980

sounds and phonemes within spoken words

331

00:12:58,639 --> 00:13:03,420

since 2000 many many neuroimaging

332

00:13:01,800 --> 00:13:06,509

studies have been done to show that

333

00:13:03,420 --> 00:13:08,399

phonic decoding instant word recognition

334

00:13:06,509 --> 00:13:11,130

which we're talking about here memory

335

00:13:08,399 --> 00:13:14,130

for faces and object naming looking at a

336

00:13:11,130 --> 00:13:16,560

chair calling it chair all of those

337

00:13:14,130 --> 00:13:18,839

have different activation patterns in

338

00:13:16,560 --> 00:13:21,269

our brains they're not the same process

339

00:13:18,839 --> 00:13:23,279

and so now Cattell’s findings are

340

00:13:21,269 --> 00:13:23,970

starting to make sense the reason why

341

00:13:23,279 --> 00:13:26,699

there was a difference

342

00:13:23,970 --> 00:13:28,769

and reaction time to objects versus the

343

00:13:26,699 --> 00:13:30,449

printed word related to that object was

344

00:13:28,769 --> 00:13:31,670

the fact that different mental processes

345

00:13:30,449 --> 00:13:33,990

were involved

346

00:13:31,670 --> 00:13:35,910

so does visual memory play a role in

347

00:13:33,990 --> 00:13:38,100

reading at all well it does play a role

348

00:13:35,910 --> 00:13:41,009

at some level in the as I mentioned

349

00:13:38,100 --> 00:13:43,379

earlier visual and phonological paired

350

00:13:41,009 --> 00:13:45,029

associate learning you see a letter T

351

00:13:43,379 --> 00:13:47,220

and you have to make the “t” sound or you

352

00:13:45,029 --> 00:13:49,199

have to give the name T there's a paired

353

00:13:47,220 --> 00:13:51,329

of associate learning but we have little

354

00:13:49,199 --> 00:13:54,300

or no evidence to suggest that it's that

355

00:13:51,329 --> 00:13:57,000

visual memory part that is the causal

356

00:13:54,300 --> 00:13:58,199

factor in children struggling with their

357

00:13:57,000 --> 00:14:00,149

letter-sound skills

358

00:13:58,199 --> 00:14:03,120

it's the phonological factor and we have

359

00:14:00,149 --> 00:14:04,560

a number of studies to suggest that once

360

00:14:03,120 --> 00:14:06,629

letters are learned to the point where

361

00:14:04,560 --> 00:14:08,939

their automatic visual memory appears to

362

00:14:06,629 --> 00:14:11,699

play little or no role in remembering

363

00:14:08,939 --> 00:14:14,610

words it then becomes this sequence of

364

00:14:11,699 --> 00:14:17,129

letters that is remembered not some sort

365

00:14:14,610 --> 00:14:18,300

of visual look of the word if it was the

366

00:14:17,129 --> 00:14:20,550

visual look of the word it would be

367

00:14:18,300 --> 00:14:21,990

difficult to explain all the other

368

00:14:20,550 --> 00:14:25,610

elements that were mentioned in the

369

00:14:21,990 --> 00:14:28,199

previous several slides we now know that

370

00:14:25,610 --> 00:14:30,389

orthographic memory the memory for

371

00:14:28,199 --> 00:14:33,149

specific letter sequences is what we

372

00:14:30,389 --> 00:14:34,800

secure in memory that may not be the

373

00:14:33,149 --> 00:14:36,449

least bit obvious and it's taken a long

374

00:14:34,800 --> 00:14:38,970

time for researchers to finally figure

375

00:14:36,449 --> 00:14:40,259

this out but in module four there will

376

00:14:38,970 --> 00:14:44,189

be a detailed explanation of that

377

00:14:40,259 --> 00:14:46,079

process so based on this a child sees

378

00:14:44,189 --> 00:14:47,759

bear look at all the different versions

379

00:14:46,079 --> 00:14:49,829

of the word bear and how different they

380

00:14:47,759 --> 00:14:52,470

are visually from one another but it

381

00:14:49,829 --> 00:14:54,750

doesn't matter all of them have the

382

00:14:52,470 --> 00:14:56,759

exact same orthographic memory all of

383

00:14:54,750 --> 00:14:59,759

them represent the same letters in the

384

00:14:56,759 --> 00:15:02,160

same order and their visual features are

385

00:14:59,759 --> 00:15:04,699

very different from one another but they

386

00:15:02,160 --> 00:15:06,660

all activate the exact same

387

00:15:04,699 --> 00:15:11,160

pronunciation and they activate the

388

00:15:06,660 --> 00:15:12,800

exact same meaning even though the term

389

00:15:11,160 --> 00:15:15,720

sight word has been used many ways in

390

00:15:12,800 --> 00:15:17,129

education there is one way in which it's

391

00:15:15,720 --> 00:15:19,470

been used that overlaps with how

392

00:15:17,129 --> 00:15:21,559

researchers use the term researchers and

393

00:15:19,470 --> 00:15:23,790

educators to find sight words as known

394

00:15:21,559 --> 00:15:25,589

instantly familiar words that don't

395

00:15:23,790 --> 00:15:27,089

require any effort they jump out at us

396

00:15:25,589 --> 00:15:28,620

we know them we don't have to sound them

397

00:15:27,089 --> 00:15:30,809

out we don't have to guess and they're

398

00:15:28,620 --> 00:15:32,639

very well secured in our memory skilled

399

00:15:30,809 --> 00:15:34,019

readers develop very large sight vocabulary

400

00:15:32,639 --> 00:15:35,939

which helps them get through

401

00:15:34,019 --> 00:15:37,870

text and helps them become very fluent

402

00:15:35,939 --> 00:15:40,120

however weak readers too

403

00:15:37,870 --> 00:15:41,770

build that site vocabulary they have

404

00:15:40,120 --> 00:15:44,920

much more limited site vocabularies and

405

00:15:41,770 --> 00:15:47,110

therefore they're much less fluent it

406

00:15:44,920 --> 00:15:48,880

really feels like we are remembering

407

00:15:47,110 --> 00:15:52,150

words based on visual memory process

408

00:15:48,880 --> 00:15:54,550

that's our intuition however as you

409

00:15:52,150 --> 00:15:57,760

noted from the various bulleted items

410

00:15:54,550 --> 00:15:59,730

throughout this session that science has

411

00:15:57,760 --> 00:16:01,960

showed us that is not how it works our

412

00:15:59,730 --> 00:16:04,330

intuitions fail us tremendously when it

413

00:16:01,960 --> 00:16:05,620

comes to word reading if we want to

414

00:16:04,330 --> 00:16:07,450

understand word reading we have to look

415

00:16:05,620 --> 00:16:09,850

elsewhere we've got to go beyond our

416

00:16:07,450 --> 00:16:11,529

intuitions if we want to understand how

417

00:16:09,850 --> 00:16:13,870

we actually remember the words we read

418

00:16:11,529 --> 00:16:15,400

because that's one thing weak readers do

419

00:16:13,870 --> 00:16:20,350

not do they are not good at remembering

420

00:16:15,400 --> 00:16:22,390

the words they read you may want to

421

00:16:20,350 --> 00:16:24,450

pause here if you're particularly if

422

00:16:22,390 --> 00:16:28,089

you're working in a small group and

423

00:16:24,450 --> 00:16:29,740

ponder some of these questions if word

424

00:16:28,089 --> 00:16:31,990

reading is not based on visual memory

425

00:16:29,740 --> 00:16:34,750

what skills is it strongly correlated

426

00:16:31,990 --> 00:16:36,520

with how might this shift in

427

00:16:34,750 --> 00:16:38,940

understanding influence a shift in

428

00:16:36,520 --> 00:16:38,940

reading instruction

429

00:16:46,270 --> 00:16:50,649

in the next module we will take a close

430

00:16:48,370 --> 00:16:53,220

look at the three killing systems theory

431

00:16:50,649 --> 00:16:53,220

of reading