Report (tab)	Priority	Question	Notes	Reporting	Lessons to pull	Script	R code	Results/Interpretation
	1	How many times does an exit have to be given? When in a plan are exits given? [1]	Goal 1: know about individual exits (are they "not good" in that they're given too much). Goal 2: know about when in a plan it's best to give exits - currently every 2 weeks. NOTE after 4/25 meeting: -Run logistic regression for the following plans alone: rhyme, word awareness, rote counting, and one-to-one	For Goal 1, I build a logistic regression model to check the difference between the number of exit exam, plan name and Maximum Exit score, it seems like they are not associated with each other.		select fsg_lesson_stats.student_id,lessons.plan_id,plans.name, if(school_year_students.student_grade=-2, "PS", "PK") 'Grade', sum(if(lessons.type = 'W', 1,0)) 'Weekly_Assessments_Given', sum(if(lessons.type = 'E', 1, 0)) 'Number of Exit Exam', round(avg(if(lessons.week = 0.5,fsg_lesson_stats.stat.NULL)),0) 'preclass_exit_exam', round(avg(if(lessons.week = 2.5,fsg_lesson_stats.stat.NULL)),0) 'first_exit_exam', round(avg(if(lessons.week = 4.5,fsg_lesson_stats.stat.NULL)),0) 'second_exit_exam', round(avg(if(lessons.week = 6.5,fsg_lesson_stats.stat.NULL)),0) 'third_exit_exam', max(if(lessons.type='E',fsg_lesson_stats.stat.NULL)) 'Maximum_Exit_Score', if(max(if(lessons.type='E',fsg_lesson_stats.stat.NULL))>=75, 'Pass', 'Fail') 'Pass_Exam_or_Not' from fsg_lesson_stats inner join lessons inner join plans inner join school_year_students on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan_id and school_year_students.student_id=fsg_lesson_stats.student_id where lessons.type in ('W','E') group by student_id, lessons.plan_id order by student_id;	exit <- read.csv("/Users/yimanzhang/Desktop/intern/FSG/FSG_research/ NumberofExitvsPass.csv", header=T,stringsAsFactors = F) head(exit) str(exit) levels(exit$name) exit[,7:11]<- apply(exit[,7:11],2,as.numeric) exit1<-exit[!is.na(exit$Maximum_Exit_Score),] summary(exit1) exit2 <- exit1[,c(1,2,3,4,5,6,11,12)] str(exit2) colnames(exit2)[c(6,7,8)]=c('NumExit', 'MaximumScore','Pass') model <- glm(factor(Pass) ~ factor(Grade)+factor(NumExit)+factor(Weekly_Assessments_Given),family=binomial(link='logit'),data=exit2) summary(model) library('ggplot2') ggplot(exit2, aes(x=NumExit)) + geom_density() #model1 <- glm(Pass ~ NumExit+plan_name,family=binomial(link='logit'), data = exit2)exit2$plan_name %in% c('Phonemes','Quantification','Rational Counting','Rhyme','Syllables','Word Awareness',"),]) data1 = exit2[exit2$name %in% c('T1 Rational Counting','T1 Rythm','T1 Word Awareness','T1 One to One'),] model1 <- glm(factor(Pass) ~ factor(Grade)+factor(NumExit), family=binomial(link='logit'), data = data1) summary(model1) model2 <- glm(factor(Pass) ~ factor(Weekly_Assessments_Given), family=binomial(link='logit'), data=data1$G ...no[data1$data1$G ...no=='PS',]) summary(model2) model3 <- glm(factor(Pass) ~ factor(NumExit),family=binomial(link='logit'),data=data1[data1$G ...no=='PS',]) summary(model3) model4 <- glm(factor(Pass) ~ factor(NumExit),family=binomial(link='logit'),data=data1[data1$G ...no... summary(model4) write.csv(data1,"/Users/yimanzhang/Desktop/data1.csv") summary(factor(data1$Grade)) summary(factor(data1$Grade)) summary(factor(data1$NumExit))	Goal 1:For all plans combined (logistic regression): no relationship between number of exits given and pass rate. Goal 2 (response): Continue giving exits at least every 2 weeks. From data you can see that there are many students who fail an exit but are not given a subsequent exit to get them off the plan. This could be that progress monitoring exits them, but that isn't clear. See plot results in Abby's email, subject: updated result for Q1 and Q2. Attachment: "How many exit should be given". Grades combined: -Number of exit assessments does not impact pass rate. -Number of weekly assesment DOES impact pass rate. 2 weekly assessments associated with higher student pass rates (regardless of grade). Grades separated: -Number of exit assessments does not impact pass rate for PK. For PS it DOES -- 2 exits increases odds of passing exit by 1.46.
	3	What is the average exit time for each plan (T1-T3)?	By plan and tier, if info available beyond T1 (T1 Rhyme, T2 Rhyme..), what is the average time all children exit? This could include both at which week (w 1-6) during the plan was the group closed or child moved and how long were they on the plan total (3 weeks, 6 weeks)? The goal here is to look at how the plans are being used and the pace at which FSG instruction is taking place. NOTE after 4/25 meeting: Rerun r script including "n" for each group. Paste results in second tab of this workbook. Send plot for faster/slower analysis to Abby [2]		select plans.id 'plan_id', plans.name 'plan_name', plans.plan_tier_id, if(school_year_students.student_grade='-1','PK','PS') 'Grade', max(concat(lessons.week,'.',lessons.weight)) 'Last_Lesson_Taught', round(min(concat(lessons.week,'.',lessons.weight)), 1) 'First_Lesson_Taught' from plans inner join lessons inner join fsg_lesson_stats inner join school_year_students on plans.id = lessons.plan_id and lessons.id = fsg_lesson_stats.lesson_id and fsg_lesson_stats.student_id=school_year_students.student_id while lessons.type="L" group by plan_name, plan_id;	exit <- read.csv("/Users/yimanzhang/Desktop/intern/FSG/FSG_research/ NumberofExitvsPass.csv", header=T,na.strings=T,stringsAsFactors = F) str(exit) exit$name=as.factor(exit$name) score = rep(0) Last_Exit_Exam_Score <- function(x){ if(!is.na(x[3])) { score= x[3] } else if (!is.na(x[2])) { score = x[2] } else { score =x[1] return (score) } library('dplyr') library('magrittr') #str(exit) Last_Score <- exit[,c(8,9,10)] %>% apply(2,function(x) as.numeric(x)) %>% apply(1, Last_Exit_Exam_Score) exit1 <- na.omit(cbind(exit[,c(1,2,3,4)],Last_Score)) head(exit1) PassRate <- exit1 %>% group_by(plan_id) %>% summarise(PassRate=sum(Last_Score>=75)/n()) PassRate #str(exit1) #exit1[exit1$plan_id==3,] #head(exit1) pace <- read.csv("/Users/yimanzhang/Desktop/intern/FSG/FSG_research/ LastLesson.csv", header=T,na.strings = F) summary(pace) str(pace) head(pace) pace = pace %>% filter(plan_tier_id==1) %>% mutate(Round_Last_lesson_Taught=ifelse(abs(Last_Lesson_Taught-(trunc(Last_Lesson_Taught)+0.5))<=0.25, trunc(Last_Lesson_Taught), trunc(Last_Lesson_Taught)+0.5)) avg_by_month <- pace %>% group_by(plan_name,Grade) %>% summarize(mean=mean(Round_Last_lesson_Taught),n=n()) dim(avg_by_month) avg_by_month1 = data.frame (plan_name = avg_by_month$plan_name, Grade=avg_by_month$Grade, mean = sapply(avg_by_month$mean,function(a) round(a, 1)), n = avg_by_month$n) print avg_by_month$n library('ggplot2') pace1 <-pace %>% inner_join(avg_by_month1,by=c('plan_name','Grade')) %>% inner_join(PassRate,by='plan_id') %>% mutate(diff=Round_Last_lesson_Taught-mean) %>% #mutate(rate=ifelse(abs(diff)<=0.3, 'equal','unequal')) %>% mutate(rate=ifelse(diff<=0.3, 'equal', ifelse(diff>0, 'more','less')))%>% mutate(speed=ifelse(Round_Last_lesson_Taught==mean,'equal',i felse(Round_Last_lesson_Taught<mean,'slow','fast'))) head(pace1,n=10) #data1 = pace1[pace1$plan_name%in%c('T1 Rhyme','T1 Rational Counting','T1 Phonemes','T1 Word Awareness',)] model1= lm(PassRate~Last_Lesson_Taught+Grade, data=pace1') summary(model1) model2 = lm(PassRate ~ Last_Lesson_Taught + rate + First_Lesson_Taught+Grade,data=pace1) summary(model2) model3 = lm(PassRate~Last_Lesson_Taught*rate+Grade ,data=pace1) summary(model3) #install.packages('corrplot') library('corrplot') corrplot(cor(pace1[,names(pace1) %in% c("PassRate", "diff","Last_Lesson_Taught","mean")]),method='number') ggplot(pace1,aes(x=rate,y=PassRate,fill=Grade)) + geom_boxplot() + facet_wrap(~plan_name, scales='free') library('mgcv') library('nlme') library('jamclass') gam.fit = gam(PassRate ~ rate+s(Last_Lesson_Taught), data=pace1) summary(gam.fit) plot(gam.fit) write.csv(pace1,"/Users/yimanzhang/Desktop/pace1.csv")	Looking at teachers who moved more or less quickly than average through a plan there don't appear to be clear patterns in differences in performance on student pass rates. (Plots in Abby's email: updated result for Q1 and Q2, attachemnt "lesson pace") Results: The pace at which teachers move through a lesson doesn't have an association wtih student pass rate. However, the point at which you stop (i.e., lesson 1.3, lesson 2.2, etc) is associated with student pass rate. Can't really say how though bc of the non-linear relationship between the variables. Yiman had to run a non-linear model to get an accurate result. Would need to investigate further, maybe by examining plots.
	3	Compare exits to PM. [3]	Will need blocks of assessments chunked by PM1 window. Include extension. Some questions: For children who pass the exit before the end of a plan (done by plan), do those children actually belong on that plan? For example, if a child passes the rhyme exit at 2.5, they have not actually had any direct instruction for a field of three. NOTE after 4/25 meeting: Share temp4.csv file with Abby.			### From FSG Database select lessons.name, student_id, ecrid, stat from fsg_lesson_stats inner join lessons inner join students on fsg_lesson_stats.lesson_id=lessons.id and fsg_lesson_stats.student_id=students.id where type='E' and name='L1-LS.1B' group by name, student_id; ### From ECR Database select studentMaster.studentId, studentMaster.period, studentMaster.assessment, studentMaster.subassessment, Date(lastUpdate) 'updated_at', studentMaster.value from studentMaster where calculation='' and subassessment='rhy';	

Report (tab)	Priority	Question	Notes	Reporting	Lessons to pull	Script	R code	Results/Interpretation
	4	Which plans are most/least used at each quarter/between PM windows, by age? [4]	data entered for a student for a lesson			select t2.GroupName,t2.GroupID,t2.Grade,date(min(t2.updated_at)) 'start',date(max(t2.updated_at)) 'end' from (select plans.name 'GroupName',lessons.id 'lesson_id',groups.id 'GroupID',fsg_lesson_stats.stat, lessons.type,fsg_lesson_stats.updated_at, if(school_year_students.student_grade=-1,'PK','PS') 'Grade' from groups inner join lessons inner join fsg_lesson_stats inner join plans inner join school_year_students on groups.e = lessons.plan_id And lessons.e = fsg_lesson_stats.lesson_id And school_year_students.student_id=fsg_lesson_stats.student_id group by t2.GroupID;	data <- read.csv('/Users/yimanzhang/Desktop/Intern/FSG/FSG_research/Q4.csv',stringsAsFactors = F) head(data) library('lubridate') int1 <- interval(ymd("2015-09-07"), ymd("2015-11-02")) int2 <- interval(ymd("2015-11-03"), ymd("2016-01-19")) int3 <- interval(ymd("2016-01-20"), ymd("2016-03-21")) int4 <- interval(ymd("2016-03-22"), ymd("2016-05-30")) timerange = interval(data$start,data$end) Q1=int_overlaps(timerange, int1) Q2=int_overlaps(timerange, int2) Q3=int_overlaps(timerange, int3) Q4=int_overlaps(timerange, int4) Q=cbind(data[,c(1:3)],Q1,Q2,Q3,Q4) head(Q,n=200) library('reshape') result <- Q %>% melt(id=c('Grade','GroupID','GroupName')) %>% mutate(Quarter=variable) %>% filter(value==TRUE) %>% group_by(Quarter,Grade,GroupName) %>% summarize(n=n()) %>% print tbl_df %>% print dim(result)[1] write.csv(result, '/Users/yimanzhang/Desktop/Intern/FSG/FSG_research/Q4.csv')	Yiman to send excel results.
	5	What plans are used between each PM window?	Show classroomID, campusID, leaID, grade, planName; count number of students where the lesson stats date is between x and y			select StudentPlanInfo.*,PlanInfo.start, PlanInfo.end from (select students.id 'StudentID', (group_students.group_id 'GroupID', plans.name 'GroupName', classrooms.name 'Classroom',campuses.name 'Campus', if(school_year_students.student_grade=-1,'PK','PS') 'Grade' from students inner join group_students inner join groups inner join classrooms inner join plans inner join school_year_students inner join campuses on students.id = group_students.student_id And groups.id = group_students.group_id And classrooms.id = groups.classroom_id And groups.id = plans.id And school_year_students.student_id =students.id And campuses.id=classrooms.campus_id)StudentPlanInfo jt6utdentPlanInfo inner join (select t2.plan_name,t2.group_id,date(min(t2.updated_at)) 'start',date(max(t2.updated_at)) 'end' from (select plans.name 'plan_name',lessons.id 'lesson_id',groups.id 'group_id',fsg_lesson_stats.stat, lessons.type,fsg_lesson_stats.updated_at from groups inner join lessons inner join fsg_lesson_stats inner join plans on groups.id = lessons.plan_id And lessons.id=lessons.plan_id And plans.id=lessons.plan_id)t2 group by t2.group_id)PlanInfo ON StudentPlanInfo.GroupID=PlanInfo.group_id;	PM_students <- read.csv('/Users/yimanzhang/Desktop/Intern/FSG/FSG_research/Q5.csv',stringsAsFactors = F) head(PM_students) library('lubridate') int1 <- interval(ymd("2015-09-07"), ymd("2015-11-02")) int2 <- interval(ymd("2015-11-03"), ymd("2016-01-19")) int3 <- interval(ymd("2016-01-20"), ymd("2016-03-21")) int4 <- interval(ymd("2016-03-22"), ymd("2016-05-30")) timerange = interval(PM_students$start,PM_students$end) Q1=int_overlaps(timerange, int1) Q2=int_overlaps(timerange, int2) Q3=int_overlaps(timerange, int3) Q4=int_overlaps(timerange, int4) PM=cbind(PM_students[,c(1:6)],Q1,Q2,Q3,Q4) head(PM) result2 <- PM %>% melt(id=c('Campus','Classroom','Grade','GroupID','GroupName','StudentID'),na.rm=T) %>% mutate(Quarter=variable) %>% filter(value==TRUE') %>% group_by(Campus,Classroom,Quarter,Grade,GroupName) %>% summarize(n=n()) %>% arrange(desc(n)) %>% tbl_df %>% print dim(result2)[1] write.csv(result2, '/Users/yimanzhang/Desktop/Intern/FSG/FSG_research/Q5.csv')	Yiman to send excel results (same as Q4)
	6	How many times is a lesson repeated? Which plans have the greatest "rate" of reteaching overall?	Include number of times retaught and for how many students		Exclude ELL and artic plans	SELECT DescriptionTab.*, lessonTab.LessonId, lessonTab.Lesson_Name, lessonTab.Lesson_Number, lessonTab.Score, lessonTa FROM (select students.id 'StudentID',students.first_name 'First Name',students.last_name 'Last Name',concat(students.first_name,' ',stud group_students.group_id 'GroupID', plans.name 'Group Name', classrooms.id 'ClassroomID',classrooms.name 'Classroom Name', if(school_year_students.student_grade=-1,'PK','PS') 'Grade', group_students.group_student_tier_id 'Student Plan Tier', groups.exited_at 'Student Exit Date', groups.exited_at 'Group Exit Date' from students inner join group_students inner join groups inner join classrooms inner join plans inner join school_year_students on students.id = group_students.student_id And groups.id = group_students.group_id And classrooms.id = groups.classroom_id And groups.id = plans.id And school_year_students.student_id=students.id group by StudentID, groups.id order by StudentID) AS DescriptionTab INNER JOIN (select lessons.plan_id, fsg_lesson_stats.student_id,lessons.id 'LessonId', lesson_templates.name 'Lesson_Name',concat(lessons. fsg_lesson_stats.stat 'Score', lessons.type 'Lesson_Type', lessons.updated_at 'Lesson_Stat_Date', lesson_template_id 'Lesson_Templatil',concat(lesson_templates.week,'-', lesson_templates.weight) 'Lesson_Template from lessons inner join fsg_lesson_stats inner join lesson_templates on lessons.id = fsg_lesson_stats.lesson_id and lesson_templates.id = lessons.lesson_template_id where lessons.type in ('L','R','C'); group by plan_id, fsg_lesson_stats.student_id,LessonId) AS lessonTab ON DescriptionTab.GroupID = lessonTab.plan_id And DescriptionTab.StudentID = lessonTab.student_id;		Use Tableua: Columns (lesson template, lesson template number) rows (grade, count of lesson template) Yiman to send file so Abby can open in Tableau
	7	Look at all daily's for a plan together - validity.	Looking for outliers in lessons					Plots in Abby's email subject "ask you questions of the FSG research"
	8	Compare daily's to exits.	correlations - are these measuring the same construct Used average daily score to compare to average exit score.			select exit_exam.student_id,exit_exam.plan,exit_exam.plan_id,exit_exam.plan_id.ex it_exam.exit_avg 'exit_avg_score', daily.daily_avg 'daily_avg_score',exit_exam.n,exit,daily.n_daily from (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name',lessons.type,round(avg(fsg_lesson_stats.stat),0) 'exit_avg',count(*) n_exit from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = where lessons.type='E' and fsg_lesson_stats.stat is not NULL group by plan_name, plan_id, student_id)exit_exam inner join (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name', lessons.type,round(avg(fsg_lesson_stats.stat),0) 'daily_avg',count(*) n_daily from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan where lessons.type='L' and fsg_lesson_stats.stat is not NULL group by plan_name, plan_id, student_id)daily on exit_exam.student_id = daily.student_id and exit_exam.plan_id = daily.plan_id order by plan_name, plan_id, student_id;	exit_daily <- read.csv('/Users/yimanzhang/Desktop/Intern/FSG/FSG_research/ Exit_Daily.csv',stringsAsFactors = F) str(exit_daily) exit_daily$exitPass = ifelse(exit_daily$exit_avg_score>=75,"Pass","Fail") exit_daily$dailyPass = ifelse(exit_daily$daily_avg_score>=75,"Pass","Fail") sum(exit_daily$exitPass==exit_daily$dailyPass)/length(exit_daily$ exitPass) matchrate <- function(x){ y=exit_daily[exit_daily$plan_name==x,] return(sum(y$exitPass==y$dailyPass)/length(y$exitPass)) } plan_name=data.frame(summary(factor(exit_daily$plan_name))) colnames(plan_name)='N' library('dplyr') matchrate <- exit_daily$plan_name %>% unique %>% as.data.frame %>% apply(1,matchrate) %>% print result = cbind(rownames(plan_name),y) rownames(y)=NULL write.csv(result,'/Users/yimanzhang/Desktop/Intern/FSG/FSG_res earch/exit_daily_match.csv')	
	9	Compare (set of) daily to weekly. [5]	May be dependent on how many people are actually doing the weekly assessments (not mandatory for all students). goal 1: do daily lessons correlate with weeklys goals 2: are a set of daily assessments a replacement for weekly assessment			select weekly.student_id,weekly.plan_name,weekly.plan_id,daily.week.w eekly.stat 'weekly_assessment_score', daily.week.w 'daily_avg_score',daily.neelect weekly.student_id,weekly.plan_name,weekly.plan_id,daily.week.w eekly.stat 'weekly_assessment_score', daily.avg 'daily_avg_score',daily.n from (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name', lessons.week,lessons.weight,lessons.type,fsg_lesson_stats.stat from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.id where lessons.type='W' and fsg_lesson_stats.stat is not NULL order by plan_name,plan_id,student_id,lessons.week, lessons.weight) weekly inner join (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name', lessons.week,lessons.weight,lessons.type,round(avg(fsg_lesson_ stats.stat),0) 'avg',count(*) n from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan_id where lessons.type='L' and fsg_lesson_stats.stat is not NULL group by plan_name,plan_id,student_id,lessons.week) daily on weekly.student_id = daily.student_id and weekly.plan_id = daily.plan_id and weekly.week=daily.week order by plan_name, plan_id, student_id;	week_daily <- read.csv('/Users/yimanzhang/Desktop/weekVSdaily.csv',stringsAs Factors = F) str(week_daily) week_daily$weekPass <- ifelse(week_daily$weekly_assessment_score>=75,"Pass","Fail") week_daily$dailyPass <- ifelse(week_daily$daily_avg_score>=75,"Pass","Fail") sum(week_daily$weekPass==week_daily$dailyPass)/length(week _daily$weekPass) matchrate <- function(x){ y=week_daily[week_daily$plan_name==x,] return(sum(y$weekPass==y$dailyPass)/length(y$weekPass)) } plan_name=data.frame(summary(factor(week_daily$plan_name)) colnames(plan_name)='N' library('dplyr') cors <- week_daily$plan_name %>% unique %>% as.data.frame %>% apply(1,matchrate) %>% print y=cbind(plan_name,cors) rownames(y)=NULL result = cbind(rownames(plan_name),y) write.csv(result,'/Users/yimanzhang/Desktop/Intern/FSG/FSG_res earch/week_daily_match.csv')	

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	10	Compare weekly assessment to exits.	May be dependent on how many people are actually doing the weekly assessments (not mandatory for all students).			select weekly.student_id,weekly.plan_name,weekly.plan_id,exit_exam.exit_avg 'exit_avg_score', weekly.week_avg 'week_avg_score',exit_exam.n_exit,weekly.n_week from (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name', lessons.type,round(avg(fsg_lesson_stats.stat),0) 'exit_avg', count(*) n_exit from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan_id where lessons.type='E' and fsg_lesson_stats.stat is not NULL group by plan_name,plan_id, student_id) exit_exam inner join (select fsg_lesson_stats.student_id,plans.id 'plan_id',plans.name 'plan_name', lessons.type,round(avg(fsg_lesson_stats.stat),0) 'week_avg',count(*) 'n_week' from fsg_lesson_stats inner join lessons inner join plans on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan_id where lessons.type='W' and fsg_lesson_stats.stat is not NULL group by plan_name,plan_id,student_id) weekly on weekly.student_id = exit_exam.student_id and weekly.plan_id = exit_exam.plan_id order by plan_name, plan_id, student_id;	exit_week <- read.csv('/Users/yimanzhang/Desktop/intern/FSG/FSG_research/Exit_Week.csv',stringsAsFactors = F) str(exit_week) exit_week$exitPass <- ifelse(exit_avg 'exit_avg_score>=75,"Pass","Fail") exit_week$weekPass <- ifelse(exit_week$week_avg_score>=75,"Pass","Fail") sum(exit_week$exitPass==exit_week$weekPass)/length(exit_week$exitPass) matchrate <- function(x){ y=exit_week[exit_week$plan_name==x,] return(sum(y$exitPass==y$weekPass)/length(y$exitPass)) } plan_name=data.frame(summary(factor(exit_week$plan_name))) colnames(plan_name)='N' library("magrittr") matchrate <- exit_week$plan_name %>% unique %>% as.data.frame %>% apply(1,matchrate) %>% print y=cbind(plan_name,matchrate) rownames(y)=NULL result = cbind(rownames(plan_name),y) write.csv(result,'/Users/yimanzhang/Desktop/intern/FSG/FSG_research/exit_week_match.csv')	
	11	Rate of change from group to group? [6]	How frequently are students changing groups (not plans)? Include classroom and campus information to determine if their are trends.			select tab.student_id, tab.grade,tab.campus_name, tab.classroom_name,sum(tab.diffdate),count(*) 'n' from (select fsg_lesson_stats.student_id 'student_id', campuses.name 'campus_name',classrooms.name 'classroom_name', plans.name 'plan_name',plans.id 'plan_id',datediff(date(max(fsg_lesson_stats.updated_at)), date(min(fsg_lesson_stats.updated_at))) 'diffdate', if(school_year_students.student_grade='-1',"PK","PS") 'grade' from fsg_lesson_stats inner join lessons inner join plans inner join groups inner join classrooms inner join classroom_students inner join campuses inner join school_year_students on fsg_lesson_stats.lesson_id = lessons.id and plans.id = lessons.plan_id and plans.id = groups.id and classrooms.id=groups.classroom_id and classroom_students.classroom_id = classrooms.id and campuses.id=classrooms.campus_id and school_year_students.student_id = fsg_lesson_stats.student_id group by student_id, plan_id) tab where classroom.name!='DEMO' group by tab.student_id order by campus_name, classroom_name;		
	12	What rate do children move tiers, both up and down? [7]	Not sure how this is structured in the app -- might need to add something that indicates if a child is t2 or t3.					
	13	Does the rate of changing plans have any relationship with student scores on the PM?	Link moving plans to PM scores.					
	14	Tier 2 FSG - can we begin to look into "effectiveness"? Are T2 children reentering T1 at appropriate levels or accessing T1 at an appropriate level? Are children on ECR T2 making greater/same/less gains then T1 peers (so looking beyond II/NS to children "officially" receiving T2 instruction?	This will be difficult to measure without a specific flag for T2/T3					

[1] Could we also look not just at how many times, but also at what point in a plan is mostly likely to result in mastery (week 2, week 4, etc.)

[2] Thinking about the rate we give exit assessments and our suggestion for revaluation of plans and groups, what impact does pacing have on student outcomes? Do teachers that move faster or slower than average have some difference in scores?

[3] The only tricky aspect of this is that Lydia suggested they administer the exit every two weeks for every plan, with some exception. This means that a lot of the exit data will show failure, before children have actually gotten to the content. I don't know if there is a way to filter those early assessments out, regardless of pass/fail.

[4] Might be helpful for PM - are the low areas the same that teachers are teaching at the window or not? If we see that they have been taught, and even closed, then that's a pretty big problem...

[5] Do the 3-5 lessons per week "add up" to the weekly assessment.

[6] Similar to plan to plan, it might be insight into streamlining differentiated instruction and FSG and making recommendations for pacing and regrouping.

[7] In regards to effectiveness of our implementation model of RtI and identification.