



# Adaptive Courseware + Active Learning FA16-SP19 Internal Assessment

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In July 2016, the Institute for Learning and Teaching (TILT) joined seven other land-grant institutions in the Accelerating Adoption of Adaptive Courseware grant offered by the Personalized Learning Consortium (PLC) of the Association of Public and Land-grant Universities (APLU). The grant runs through the end of AY 2019 and requires that 15-20% of the general education enrollments are in courses using adaptive courseware.

The TILT Instructional Design and Development (IDD) team provided faculty development workshops and individual consultation sessions to assist faculty in selecting the best courseware, active learning, and High Impact Practices (HIPs) to align with the course objectives and instructional goals.

Since 2017, TILT has provided progress reports and other reports to APLU as required by the grant. Starting with the FA18 term, [TILT](#) collected data on student perceptions of the use of adaptive courseware, titled *Student experience of adaptive courseware and perception of its effectiveness in teaching and learning in a general education curriculum*. This was a joint research project between TILT and the Personalized Learning and Adaptive Teaching Opportunities (PLATO) Program at University of Mississippi (U of M).

This assessment conducted by [IRP&E](#) is a supplemental, internal assessment of the APLU grant and not required by the granting authority. This assessment examines success rates for students enrolling in courses redesigned to utilize adaptive courseware and active learning (adaptive/active courses) compared to those who did not (non-adaptive comparative courses) in either concurrent or asynchronous terms for the same course with the same instructor. Additionally, a summary of the TILT-administered student and faculty surveys is provided. Finally, IRP&E provides recommendations for further research as adaptive learning technology within the CSU system continues to be explored.

## Summary of Findings

At the instructor level, there tends to be a slight positive association between the adoption of adaptive courseware with active learning and the course success rate. Additionally, the students who use adaptive courseware tend to find it useful and instructors tend to feel that the platform helps their students be more engaged.

When assessing the value of adaptive courseware to the university community, special consideration should be paid to its impact on the depth of student learning, achievement of learning objectives, and classroom environment and culture. These aspects of adaptive courseware cannot be measured through comparisons of course success rates. Rather, the true value will need to be assessed through a variety of techniques with data collected from those using the technologies, reporting directly on the aspects that enhanced or had a positive impact on their experiences as learners and teachers.

Overall, the analyses in this report provide some directionality on adaptive courseware with active learning, that is, the use of adaptive courseware with active learning appears to be generally favorable and not detrimental to student success.

## Description of Adaptive Courseware

A primary object of the grant was to gain more knowledge on the use of adaptive courseware in high-enrollment, general education courses. For the grant, faculty could choose from twenty-one approved adaptive learning platforms. Adaptive courseware typically covers foundational concepts and promotes mastery at the remembering and understanding levels of Blooms' Taxonomy. As a student engages with adaptive platform (course readings, taking quizzes, submitting homework, etc.), the platform tailors the student's progression based on performance and mastery of topics. On the faculty side, instructors can use the courseware analytics to identify students who may be struggling or where learning objectives or key concepts may need additional emphasis or clarification. While the specifications of these products vary, on the whole, adaptive learning platforms provide space for students to engage with foundational course content outside the classroom which often provides time during class for instructors to focus on active learning.

Faculty participating in the grant redesigned their courses with the assistance of TILT to maximize the use and effectiveness of adaptive courseware. To capitalize on the opportunity to partner with faculty already redesigning their courses due to the grant, Instructional Designers worked with faculty to incorporate active learning-based and evidence-based teaching practices and in some cases, peer educators (Learning Assistants) to help facilitate active learning during class time.

Student success outcomes pre- and post-redesign provided evidence for the effectiveness of the adaptive learning platform with active learning. Student and faculty surveys designed and administered by TILT provided insight into these users' experiences with the adaptive technology, and explored topics related to ease of use, perceived impact on grades, and effectiveness in the classroom.

## Methods

TILT provided IRP&E the sections and instructors participating in the adaptive courseware grant. A total of 246 sections in over 30 unique courses utilized the combination of adaptive courseware plus active learning between FA16 and SP19. Almost 14 thousand students participated in at least one adaptive/active course section during this period. For each instructor, non-adaptive sections of the same course from recent terms were used as comparisons to the adaptive/active section. In order to make a comparison, each instructor must have taught at least one non-adaptive section of the course. In some instances, no non-adaptive sections were available for comparison or the available sample was deemed insufficient for analysis (i.e., less than 50 students). A total of 32 course/instructor adaptive/active versus non-adaptive comparison sets were available for analysis. The number of non-adaptive and adaptive/active students included in these analyses were similar, about 13 thousand in each group. Course success rates (A, B, C, D, or S grade) were compared by adaptive/active versus non-adaptive status; statistically significant differences are noted in Table 2 (p. 5). Comparisons are made at the instructor level to control for individual pedagogical differences.

Since many of the courses included in this study were foundational or prerequisites for other courses, success rates for subsequent courses by foundational adaptive/active status were also compared. In order to be included in this analysis students must have taken a subsequent course within two terms of their taking the foundational course. Subsequent course success by foundational status are provided for LIFE103 (LIFE102 foundational) and PH122 (PH121 foundational); statistically significant differences are noted in Table 3 (p. 6).

Faculty participating in the grant completed the Teaching Practices Inventory (TPI), which measures the extent to which instructors use research-based teaching practices (ETP).<sup>1</sup> The ETP assigns points to those practices that

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<sup>1</sup> Wieman, C., & Gilbert, S. (2014). The teaching practices inventory: a new tool for characterizing college and university teaching in mathematics and science. *CBE life sciences education*, 13(3), 552–569. doi:10.1187/cbe.14-02-0023

improve student learning (based on current research). For example, providing a list of topics to be covered in the course is worth one point, while providing a list of topic-specific competencies students should achieve is worth three points. In general, the ETP scores in this report represent the use of research-based teaching practices for the course as a whole after being redesigned to include adaptive courseware.

Student and faculty surveys were collected anonymously by TILT using Qualtrics, web-based survey and data collection tool. TILT provided copies of the survey instruments and collected responses to IRP&E. Survey responses were analyzed using SPSS, a statistical software package and frequencies for a selected subset of survey questions are provided in Adaptive Courseware Survey Results (p. 6).

## Limitations

Overall, standardizing course redesigns, adaptive courseware adoption, and active learning practices are challenges for this grant. Redesigns were tailored to each course's needs and each instructor's teaching styles; levels of comfort with implementing research-based teaching practices vary as well.

While each course was redesigned to accommodate the addition of adaptive courseware, not all courses utilize the same courseware. The features of the platforms used in the grant offered an array of features and reporting capabilities. In some instances, faculty found the reporting dashboards and analytics of some platforms to be too rudimentary to be useful while other platforms' complexity (user interface and reporting) proved to be a deterrent to their use.

Further, variation in teaching load between semesters (cycling in and out of teaching courses) has the potential to influence courseware and research-based teaching practice use. This variation in teaching schedules is reflected in the sections selected for the analyses included in this report. Ideally, comparisons between adaptive and non-adaptive sections are made between like terms (fall-to-fall or spring-to-spring) yet in some instances fall-to-spring comparisons are made.

While the TPI provides an indication of a teaching practice's use (e.g., collaboration or sharing in teaching, providing supporting materials, feedback and testing), it does not assess the quality of its implementation. Additionally, the TPI was developed to assess ETP in STEM courses and this grant includes several non-STEM courses (e.g., HIST150 and PSY100). Also, while over 40 instructors participated in the grant, ETP scores were obtained for about half of them, thus the comparisons represent a small subsample of the redesigned courses.

## Population

The students included in this study are in one of the courses with one of the instructors that utilized an adaptive courseware platform/active learning either during the adoption or prior to the adoption. Counts do not represent unique students as some students may have taken more than one adaptive course, or an adaptive/active section of one course and a non-adaptive section of another course.

Table 1: Student Demographics by Adaptive/Active and Non-Adaptive Course Enrollment

	Non-adaptive	Adaptive/Active	Overall
Headcount	13,102	13,858	26,960
Female	58.0%	57.8%	57.9%
CCHE index	114.0	114.4	114.2
Nonresident	28.7%	31.7%	30.2%
First generation	25.2%	25.5%	25.4%
Pell recipient	21.6%	21.7%	21.6%
Hispanic/Latinx	14.2%	16.3%	15.3%
Native American/American Indian	2.4%	3.1%	2.7%
Black/African American	4.5%	4.6%	4.5%
Asian, Hawaiian, or Pacific Islander	6.5%	7.5%	7.0%
Racially minoritized	24.1%	26.6%	25.4%
- Not white, single race	9.3%	9.1%	9.2%
- Multi-race, with white	14.4%	17.5%	16.0%
- Multi-race, not white	1.4%	1.6%	1.5%
First generation and racially minoritized	11.0%	11.9%	11.5%

Demographically students are similar by adaptive/active courseware status. This is not surprising since enrollment in these sections is somewhat random and adaptive courseware was not advertised in the catalog as a part of the course. The headcount by instructor/course and term can be seen in Table 15 (p. 10) of the Appendix.

### Course level Success by Adaptive Courseware/Active Learning Status

Table 2 displays the course success rates for each course and instructor by adaptive courseware/active learning use. Comparisons are made at the instructor level to control for individual pedagogical differences. Green shading indicates instances when the success rates for adaptive/active sections are at least 1 percentage point (PP) *higher* than the non-adaptive sections; pink shading indicates instances when adaptive/active sections are at least 1 PP *lower* than the non-adaptive sections. Additionally, the Pearson Chi-square p-value for each course/instructor pair is displayed; success rates with statistically significant differences (p-value ≤ .05) are marked with an asterisk (\*).

The association of adaptive courseware/active learning on student success should be evaluated on a case-by-case basis. For example, for ECON204 the 86.8% success rate for students in the adaptive/active group is significantly higher than the 78.1% success rate for non-adaptive group. While LIFE102 (with Instructor X941) shows similar success rates for adaptive/active and non-adaptive sections (85.5% versus 79.7%), these rates are statistically similar (p-value > .05). Despite the lack of statistical significance, the difference may warrant some practical significance: the 5.8 PP higher success rate in the adaptive/active sections equates to an additional 17 students passing the course compared to the non-adaptive sections.

Table 2: Adaptive/active and Non-adaptive Student Success Outcomes by Course and Instructor

		Headcount		A, B, C, or S		PP difference	Pearson Chi-square
		Non-adaptive	Adaptive/Active	Non-adaptive	Adaptive/Active		
ACT 205	Instructor M338	199	204	84.9%	83.3%	-1.6	0.66
	Instructor Q507	88	215	81.8%	82.3%	0.5	0.92
	Instructor D810	928	953	80.2%*	75.1%*	-5.0	0.01
ACT 210	Instructor D810	164	95	92.7%*	84.2%*	-8.5	0.03
BZ 101	Instructor Z911	714	664	71.0%*	76.8%*	5.8	0.01
BZ 110	Instructor Z911	1,028	1,074	70.1%	72.3%	2.2	0.26
CHEM111	Instructor Q259	255	428	64.3%*	82.0%*	10.5	<0.01
	Instructor E610	572	445	78.5%	78.7%	0.2	0.95
CHEM113	Instructor I274	511	503	77.5%	78.7%	1.2	0.64
ECON202	Instructor D163	661	523	86.5%	85.3%	-1.3	0.54
ECON204	Instructor D849	265	280	78.1%*	86.8%*	8.7	0.01
FSHN150	Instructor B566	142	305	90.8%	91.1%	0.3	0.92
	Instructor X228	372	165	68.3%	69.7%	1.4	0.74
	Instructor K908	353	362	88.1%	87.0%	-1.1	0.66
HES 145	Instructor G490	184	151	93.5%	87.4%	-6.1	0.06
HIST150	Instructor I786	108	79	86.1%	92.4%	6.3	0.18
HIST151	Instructor Q672	105	102	85.7%	84.3%	-1.4	0.78
LIFE102	Instructor W394	748	749	77.8%*	82.0%*	4.2	0.04
	Instructor L298	610	303	75.1%	74.9%	-0.2	0.96
	Instructor R419	330	299	67.3%*	79.6%*	12.3	<0.01
	Instructor X941	305	303	79.7%	85.5%	5.8	0.06
LIFE103	Instructor W394	275	271	88.7%	90.0%	1.3	0.62
	Instructor R214	227	235	70.5%	74.0%	3.6	0.39
PH 121	Instructor J78	989	990	95.1%	94.9%	-0.2	0.84
	Instructor C717	318	341	94.7%*	90.6%*	-4.0	0.05
PH 122	Instructor J78	862	1,228	97.9%	97.1%	-0.8	0.28
PHIL100	Instructor H282	305	273	76.7%*	85.3%*	8.6	0.01
PSY 100	Instructor P173	306	690	80.1%	79.4%	-0.6	0.82
	Instructor H366	177	142	87.0%	86.6%	-0.4	0.92
	Instructor L822	319	658	85.9%	82.2%	-3.7	0.15
	Instructor O203	332	664	79.2%*	88.9%*	9.6	<0.01
	Instructor S354	350	164	87.4%	90.2%	2.8	0.35

\* Statistically significantly different at  $p \leq .05$

Table 3 below displays the success rates in the subsequent courses by adaptive courseware/active learning use in the initial course. Green shading indicates instances when the success rates for adaptive/active sections are at least 1 PP *higher* than the non-adaptive sections; pink shading indicates instances when adaptive/active sections are at least 1 PP *lower* than the non-adaptive sections. Overall, success rates in subsequent courses were statistically similar between students in adaptive/active and non-adaptive foundational courses.

**Table 3: Subsequent Course Success by Foundational Course Adaptive Courseware Status**

Subsequent (Foundational)	Headcount		A, B, C, or S		PP difference	Pearson Chi-square
	Non-adaptive	Adaptive/Active	Non-adaptive	Adaptive/Active		
LIFE103 (LIFE102)	400	389	83.5%	83.4%	-0.1	0.98
PH 122 (PH 121)	693	775	97.0%	95.7%	-1.2	0.22

\* Statistically significantly different at  $p \leq .05$

ETP scores were obtained for about 20 faculty participating in the grant. Table 4 displays the course success rates by ETP score range. Green shading indicates instances when the success rates for adaptive/active sections are at least 1 PP *higher* than the non-adaptive sections; pink shading indicates instances when adaptive/active sections are at least 1 PP *lower* than the non-adaptive sections. Additionally, the Pearson Chi-square p-value for each ETP score range is displayed; success rates with statistically significant differences ( $p\text{-value} \leq .05$ ) are marked with an asterisk (\*). In general, instructors with ETP scores above 24 had higher course success rates than those with lower ETP scores. However, these differences were statistically significant only for instructors of STEM courses with ETP scores of 30 and higher.

**Table 4: Adaptive and Non-adaptive Student Success Outcomes by Course Type and ETP Level**

Course type and ETP score	Headcount		A, B, C, or S		PP difference	Pearson Chi-square	
	Non-adaptive	Adaptive/Active	Non-adaptive	Adaptive/Active			
STEM	49-37	4,676	4,904	82.5%*	85.0%*	2.4	<0.01
	34-30	865	731	71.9%*	79.1%*	7.2	<0.01
	27-24	1,207	1,171	82.7%	84.5%	1.9	0.22
	21-18	353	362	88.1%	87.0%	-1.1	0.66
non-STEM	34-30	759	1,401	83.0%	85.9%	2.9	0.07
	27-24	611	963	78.4%	81.1%	2.7	0.19

\* Statistically significantly different at  $p \leq .05$

## Adaptive Courseware Survey Results

Selected questions from TILT's student and faculty surveys appear in the following tables. These questions focus on self-reported experiences and perceptions of students and faculty who utilized adaptive learning technologies. Students surveys were conducted in FA18 and SP19 and the faculty survey was conducted in SP19.

**Table 5: Student Ratings of Adaptive Courseware**

The adaptive courseware:	No	Somewhat	Yes	Total	Avg
Was easy to use	5.1%	38.6%	56.3%	1,773	2.5
Helped me keep track of my progress	11.4%	40.3%	48.2%	1,773	2.4
Had technical problems that prevented me from completing my work on time	57.5%	25.9%	16.6%	1,773	1.6
Helped me learn	13.3%	48.6%	38.0%	1,772	2.2

Table 6: Adaptive Courseware and Course Grade

	Lower	About the same	Higher	Total   Avg
I think my final grade will be _____ because we used adaptive courseware in the class.	7.8%	56.0%	36.1%	1,682   2.3

Table 7: Overall Rating of Adaptive Courseware

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Total   Avg
I liked using the adaptive courseware.	10.5%	17.9%	18.4%	40.8%	12.4%	1,651   3.3

Table 8: Use of Learning Assistants

	Yes	No	Total
Did the course use Learning Assistants (LAs)?	44.8%	55.2%	1,636   100%

Table 9: Student Ratings of Learning Assistants

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Total   Avg
Having LAs in the classroom:						
Was helpful to my learning during class time	7.2%	8.1%	32.6%	26.2%	25.8%	724   3.6
Has helped me become more actively engaged in the class	8.2%	11.6%	36.4%	23.5%	20.3%	723   3.4
Helped me to be more interested in the material	9.3%	12.2%	39.0%	20.7%	18.8%	723   3.3

Table 10: Help from Learning Assistants

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Total   Avg
The help I got from LAs during class time gave me a better understanding of the material.	7.7%	9.1%	31.4%	29.0%	22.8%	725   3.5

Table 11: Recommend Learning Assistants

	Yes	Yes, but with these changes	No	Total   Avg
I would tell other students to take a class if it has LAs.	63.9%	11.7%	24.4%	712   1.6

Table 12: Faculty Ratings of Adaptive Courseware Effects on Students

How would you rate the courseware's effect on the following:	No improvement	Slight improvement	Moderate improvement	Significant improvement	Total   Avg
Student engagement during class	35.0%	30.0%	5.0%	30.0%	20   2.3
Student engagement outside class	10.0%	25.0%	40.0%	25.0%	20   2.8
Student understanding of course material	0.0%	44.4%	22.2%	33.3%	18   2.9

Table 13: Faculty Ratings of Adaptive Courseware Effects on Classroom Environment

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Total	Avg
Requiring students to use the adaptive platform has allowed more time for active learning during class sessions	9.1%	9.1%	22.7%	36.4%	22.7%	22	3.5
The adaptive platform better prepares students for in-class discussion and activities	4.5%	9.1%	13.6%	36.4%	36.4%	22	3.9

Table 14: Frequency of Talking about Adaptive Courseware

	During the first week of class	Periodically during the first four weeks	Periodically throughout the semester	Total	Avg
How often did you talk about the adaptive courseware platform with your students?	4.5%	18.2%	77.3%	22	3.7

## Conclusions

### Students and Success Outcomes

- After controlling for instructor, few differences were found in the course success rates between adaptive/active and non-adaptive courses (Table 2).
- Across the 32 sets of comparisons, a total of 10 statistically significant differences were found in the course success rates between adaptive/active and non-adaptive sections. In 7 of these 10 instances, the success rate was higher in the adaptive/active sections than the non-adaptive sections.
- In terms of percentage point differences in success rates, 15 of the adaptive/active courses had higher success rates than the non-adaptive course; 9 had lower success rates.
- For the two subsequent courses for which data were available, no statistically significant differences were found in course success rates by foundational course status (Table 3).
- Of the instructors for which ETP scores were obtained, those with scores above 24 had higher course success rates than those with lower ETP scores (Table 4).
- The overall profile of students in adaptive/active and non-adaptive courses were similar (Table 1).

### Student and Faculty Adaptive Courseware Survey Results

- About half of students liked using adaptive courseware and most students found the adaptive courseware easy to use. About 1 in 10 experienced technical problems with the courseware that prevented them from completing their work. Over 4 in 5 students felt the courseware helped them to track their progress and to learn. Over one-third felt their final grade would be higher due to the use of adaptive courseware, but the majority felt their grade would be about the same.
- About half of students felt positively about learning assistants (LAs) and their impact in the classroom, though about one-third of students were neutral in their ratings of LAs. Almost two-thirds of students would recommend taking a class to other students if it had LAs.



- Between one-quarter and one-third of faculty felt the adaptive courseware had a significant improvement on student engagement during and outside of class as well as their understanding of the course material. Faculty felt the adaptive courseware was least effective at engagement during class, though about 7 in 10 felt the platform helped to better prepare students for in-class discussions and activities. A majority of faculty (over three-quarters) mentioned the adaptive courseware platform periodically throughout the semester.

## Areas for Further Research

- LAs for non-adaptive course: According to survey results, students would recommend courses that utilized LAs. Exploring the use of LAs for non-adaptive courses could help inform research around whether adaptive courseware increases satisfaction with LAs.
- Linking student and faculty surveys: The student and faculty surveys are anonymous and independently programmed. Embedding the section id or CRN as part of the surveys samples and datasets would enable direct comparison of students within each instructor's course. For example, student's ratings of the adaptive courseware helping them to keep track of their progress compared by the instructor's frequency of talking about the adaptive courseware or instructors' ratings of the use of active learning in the classroom by students' ratings of their anticipated course grade.
- Linking adaptive courseware to courses: Up to seven different adaptive courseware platforms were utilized for this grant and it is unclear which platforms were used for which courses, if instructors utilized more than platform across their course(s), or how many different platforms a student may have used (since some students enrolled in multiple adaptive sections during the grant period). Linking student success as well as student and faculty perceptions and preferences to each platform could indicate if there is a better/best or preferred platform that could be adopted on a larger scale for the university overall. Additionally, students reported that the connection between the courseware content and classroom content is not always evident. Further investigation is warranted to determine if it is related to the level of customization for a particular platform, timing of content delivery, or other issue.
- In-depth student and faculty assessments: Focus groups or interviews with students and faculty could provide insight into not only how these stakeholders utilized adaptive courseware but, more importantly, how it impacted the classroom and learning environments.
- Effective use of dashboard analytics: Incorporating both evidence-based teaching practices *and* adaptive courseware - technology, student communication, and analytic data inventions - is challenging for faculty. To help ease the changes and transitions, future redesigns should place a larger emphasis on the use of the data from the analytics dashboards earlier on the design process. As faculty have expressed a preference for automated analytics reporting, special consideration may be given a to platform with such capabilities and redesigns may also take into account such features.

## Appendix

Table 15: Headcount of Adaptive and Non-adaptive Courses by Instructor and Term

			SP15	FA15	SP16	FA16	SP17	FA17	SP18	FA18	SP19	Total	
ACT 205	Instructor M338	Non-adaptive	199	-	-	-	-	-	-	-	-	199	
		Adaptive	-	-	-	-	-	-	-	-	204	204	
	Instructor Q507	Non-adaptive	-	-	-	-	-	88	-	-	-	-	88
		Adaptive	-	-	-	-	-	-	-	215	-	-	215
	Instructor D810	Non-adaptive	-	231	280	187	230	-	-	-	-	-	928
		Adaptive	-	-	-	-	-	228	305	217	203	-	953
ACT 210	Instructor D810	Non-adaptive	-	-	-	164	-	-	-	-	-	-	164
		Adaptive	-	-	-	-	-	-	-	-	95	-	95
BZ 101	Instructor Z911	Non-adaptive	-	209	132	212	161	-	-	-	-	-	714
		Adaptive	-	-	-	-	-	193	135	203	133	-	664
BZ 110	Instructor Z911	Non-adaptive	-	288	209	325	206	-	-	-	-	-	1,028
		Adaptive	-	-	-	-	-	321	209	320	224	-	1,074
CHEM111	Instructor Q259	Non-adaptive	-	-	-	-	-	-	255	-	-	-	255
		Adaptive	-	-	-	-	-	-	-	-	428	-	428
	Instructor E610	Non-adaptive	-	-	-	-	-	-	572	-	-	-	572
		Adaptive	-	-	-	-	-	-	-	-	445	-	445
CHEM113	Instructor I274	Non-adaptive	-	-	-	-	-	-	511	-	-	-	511
		Adaptive	-	-	-	-	-	-	-	-	503	-	503
ECON202	Instructor D163	Non-adaptive	-	319	342	-	-	-	-	-	-	-	661
		Adaptive	-	-	-	174	349	-	-	-	-	-	523
ECON204	Instructor D849	Non-adaptive	-	-	265	-	-	-	-	-	-	-	265
		Adaptive	-	-	-	-	-	-	280	-	-	-	280
FSHN150	Instructor B566	Non-adaptive	-	-	-	-	-	-	142	-	-	-	142
		Adaptive	-	-	-	-	-	-	-	172	133	-	305
	Instructor X228	Non-adaptive	-	-	-	-	-	277	95	-	-	-	372
		Adaptive	-	-	-	-	-	-	-	105	60	-	165
	Instructor K908	Non-adaptive	-	-	-	-	-	174	179	-	-	-	353
		Adaptive	-	-	-	-	-	-	-	178	184	-	362
HES 145	Instructor G490	Non-adaptive	-	-	-	-	-	95	89	-	-	-	184
		Adaptive	-	-	-	-	-	-	-	89	62	-	151
HIST150	Instructor I786	Non-adaptive	-	-	-	-	-	-	108	-	-	-	108
		Adaptive	-	-	-	-	-	-	-	-	79	-	79
HIST151	Instructor Q672	Non-adaptive	-	-	-	-	-	-	105	-	-	-	105
		Adaptive	-	-	-	-	-	-	-	-	102	-	102
LIFE102	Instructor W394	Non-adaptive	-	-	-	270	210	268	-	-	-	-	748
		Adaptive	-	-	-	-	-	-	209	330	210	-	749
	Instructor L298	Non-adaptive	-	-	-	-	-	610	-	-	-	-	610
		Adaptive	-	-	-	-	-	-	-	303	-	-	303
	Instructor R419	Non-adaptive	-	-	-	330	-	-	-	-	-	-	330
		Adaptive	-	-	-	-	-	-	-	299	-	-	299
Instructor X941	Non-adaptive	-	-	-	-	305	-	-	-	-	-	305	
	Adaptive	-	-	-	-	-	-	303	-	-	-	303	
LIFE103	Instructor W394	Non-adaptive	-	-	-	-	-	-	275	-	-	-	275
		Adaptive	-	-	-	-	-	-	-	-	271	-	271
	Instructor R214	Non-adaptive	-	-	-	-	-	227	-	-	-	-	227
		Adaptive	-	-	-	-	-	-	-	235	-	-	235

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			SP15	FA15	SP16	FA16	SP17	FA17	SP18	FA18	SP19	Total
PH 121	Instructor J78	Non-adaptive	-	498	-	491	-	-	-	-	-	989
		Adaptive	-	-	-	-	-	494	-	496	-	990
	Instructor C717	Non-adaptive	-	-	-	-	-	-	318	-	-	318
		Adaptive	-	-	-	-	-	-	-	-	341	341
PH 122	Instructor J78	Non-adaptive	416	-	446	-	-	-	-	-	-	862
		Adaptive	-	-	-	-	397	-	424	-	407	1,228
PHIL100	Instructor H282	Non-adaptive	-	-	-	87	133	85	-	-	-	305
		Adaptive	-	-	-	-	-	-	94	83	96	273
PSY 100	Instructor P173	Non-adaptive	-	-	-	-	-	306	-	-	-	306
		Adaptive	-	-	-	-	-	-	186	344	160	690
	Instructor H366	Non-adaptive	-	-	-	-	-	177	-	-	-	177
		Adaptive	-	-	-	-	-	-	142	-	-	142
	Instructor L822	Non-adaptive	-	-	-	-	-	319	-	-	-	319
		Adaptive	-	-	-	-	-	-	173	339	146	658
	Instructor O203	Non-adaptive	-	-	-	-	-	332	-	-	-	332
		Adaptive	-	-	-	-	-	-	178	316	170	664
Instructor S354	Non-adaptive	-	-	-	-	-	350	-	-	-	350	
	Adaptive	-	-	-	-	-	-	164	-	-	164	