

## IMPACT Profile – Psychology/Developmental Psychology

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### Section 1 – Intro:

IMPACT acronymically represents: **I**nstruction **M**atters: **P**urdue **A**cademic **C**ourse **T**ransformation. As a University-wide action research project initiated by the Office of the Provost, the mission of IMPACT brings cooperating units together as a learning community (Faculty, Center for Instructional Excellence, Information Technology at Purdue, Libraries, Discovery Learning Research Center, Purdue Extended Campus) “to improve student competency and confidence through redesign of foundational courses by using research findings on sound student-centered teaching and learning.” The varied course transformation processes and outcomes are individually discussed within these profiles.

The IMPACT profiles are a medium through which faculty can chronicle their respective course transformation processes and outcomes. As such, IMPACT profiles provide teaching faculty from varying fields of study, as well as faculty developers, insight into teaching and learning challenges faculty face in teaching foundational courses and specific reflective processes and course redesign efforts to enhance students' learning. The general premise behind the profiles is that scholarly teaching emerges from faculty reflective processes related to combining teaching and learning theories with empirical research on teaching practices, specifically connected to student learning outcomes; which is to say that scholarly teaching is informed by research-based and experience-based knowledge.

The IMPACT Profiles Directory, then, is a collective of faculty profiles that facilitates readers' ability to identify best practices in course transformation processes and college teaching. Furthermore, the IMPACT Profiles Directory is designed to enhance faculty's scholarship of teaching and learning in that it

creates case studies of field specific course transformation processes and outcomes that can become the basis for conference presentations and future scholarly articles, making teaching practices public and peer reviewable.

## **Section 2 – Research Abstract:**

This profile highlights the course redesign and transformation of an introductory Psychology course. The professor responsible for the course transformation was primarily focused on these questions: how does, 1) creating smaller learning environments/classes, 2) teaching as a team of subject-matter experts from different specializations within Psychology, and 3) reducing the amount of pure content covered within a semester, enhance students' ability to think like psychologists through the lens of hypothesis testing? The course data, which include students' low stakes and high stakes assessment scores, students' assessments of their own learning gains, and end-of-semester course evaluations, suggest that students enjoy the smaller class sizes within hybrid sections of the course as well as the group activities, and that they perceive their learning gains to be higher within the hybrid sections than those students within traditional lecture sections.

## **Section 3: Faculty Profile:**

Professor Hollich is an Associate Professor of Psychology. He has been teaching within his discipline for 15 years. His teaching experience has been within doctorate-granting institutions.

## **Section 4: Course Profile:**

Professor Hollich redesigned, Psychology 120, a foundational introductory course.

### **4.1 – Where the course falls within the Psychology degree program**

There are no pre-requisites for the course as primarily first-year students enroll in it. Some students meet the course requirements prior to entering the University via Advanced Placement (AP) testing in high school. This course is required by most curricula on campus and nearly all Purdue undergraduate students take it – which means that a small percentage of the students enrolled in the course are Psychology majors.

### **4.2 – Historical data**

**Specific Learning Objectives:** Prior to the course redesign, the course was extremely content based. The primary objective, which was not necessarily explicit, was to learn the different facts and principles of cognitive and social psychology. The course structure contained three large lectures and three multiple choice high-stakes exams. The lectures were packed with Psychology content and were led by experts lecturing about their particular domains. The overarching assessment question was, did students learn the content of psychology? Professor Hollich reports that half the students did not seem to leave with the content of psychology.

**Course evaluations:** Prior to the course redesign there was tremendous variability within student evaluations between the varying instructors. Professor Hollich reports that “we have some very good instructors, who were also Murphy Award Winners (The University’s highest

and most prestigious award granted for excellence in teaching), and the feedback is pretty good with high teacher ratings.”

Lecture courses can work. The thing we were concerned about is, if you’re focusing on content, these days content is easy. You can look that up on Google. It seems like we’re underserving them [students] by just making sure they can answer a bunch of multiple choice questions correctly. Especially with a discipline like psychology where we’re trying to get them to think about the world from a different perspective from a different framework. That, if you’re trying to push this, learning different skill, thinking about the world from a different framework, then multiple choice testing is almost sending the wrong message about what you want them to take from this class. Especially because psychology is so relevant to how they’re going to succeed the rest of their time here. It seemed like a poor introduction to the research and university culture – throw you in a giant class and you become a number. Attendance was pretty bad – you’re lucky if attendance was above 60%.

#### **4.3 – Faculty narrative about the course**

##### **What challenges exist for faculty teaching a course of this type both at and beyond Purdue?**

Professor Hollich reports that there are at least three different challenges. One challenge is that there are several misconceptions about what psychology is. “As soon as you say psychology people think of clinical psychology, head shrinking, which is just a tiny percentage of what psychology is.” The science of psychology is much more about hypothesis testing and applying the methodologies of science to something that is a little mushy – people. A big part of the challenge in teaching psychology is changing students’ perceptions, “oh we’re not going to be doing therapy on people, we’re learning how people behave and we’re testing hypotheses scientifically to figure out why people act the way they do and the kinds of things that would help them be better.” The second challenge is that “it’s kind of this intersection of science and the humanities. There’s a philosophical component – an intersection of philosophy and physiology. So it’s two very different world views.” One is a medical model, one is a philosophical model. Both of them come together bringing all of the challenges of each separate side. So it’s this perfect storm of the humanities as well as the sciences. Another issue is that each different field within Psychology has a way of looking at and defining “what’s important.”

##### **Teaching and learning development opportunities – what did you want to enhance?**

Professor Hollich stated that if we’re (faculty) focusing on content, these days content is easy; students can look that up through Google. The students - it seems like faculty are underserving them by just making sure they can answer a bunch of multiple choice questions correctly - especially with a discipline like psychology in which faculty are trying to get students to think about the world from a different perspective and from a different framework. The other issue is that class attendance was bad – near 60%. If students only have to take three tests, they come on test day, which could influence a pattern for the rest of their undergraduate career within the

University. Multiple choice testing is almost sending the wrong message about what faculty want students to take from their courses. Psychology is so relevant to how students are going to succeed the rest of their time at the University. It seemed like a poor introduction to the research and university culture – to throw students into a giant class and just become a number.

**Course goals for engaging IMPACT:** The fundamental idea that teaching can be done better as a group - there is something about human interaction that leads to better decisions. Each of the different fields [within psychology] has their own way of looking at things, their own insights that could be useful to people outside the major. Professor Hollich and his team of psychology faculty wanted to take experts from each of the different specialty areas and utilize them as course instructors because they believed they have their own particular expert perspectives that students cannot learn about from a non-specialty expert. Having a team of instructors would also *enhance the consistency of instruction*. Students should get exposure to the experts from each of those different domains and really get a sense of how that particular subfield looks at the world. That was one primary goal of this IMPACT course - to bring together the real diversity of psychology. Professor Hollich’s team wanted to bring together a group of psychologists who all study something different who embody a diverse view of how psychology works and help students understand that psychology is all of these things. It was a chance to bring everybody together in the department to present psychology in the best possible light. Stated succinctly, one goal was to organize the departmental effort to put together a new course which is better than any one instructor could have done individually. Additionally, Professor Hollich and the team of psychology faculty wanted to provide smaller class sizes (fewer than 100 students) to enhance students’ engagement with course content and to help them *develop skills* in research methods.

**Redesigned course framework and rationale:**

*Course goal statements:* To give students the framework of psychology – to enhance their ability to think about the world the way psychologists do, through the lens of hypothesis testing – a scientific approach to understanding human behavior. Students should be much more savvy at reading research findings that run the gamut from politics to statistical reports to marketing approaches and recognizing how companies target you – how to look for the data and look for the results.

*Instructional models:* 1) traditional lecture sections – 2) hybrid (online lectures with face-to-face recitations) sections

**Figures:** *Student distribution throughout instructional models*

|   |              |              |              |
|---|--------------|--------------|--------------|
| <b>Traditional</b><br>3 hrs large lecture | 210 Students | 210 Students | 210 Students |
|   | 210 Students | 210 Students | 210 Students |
|   | 210 Students | 210 Students | 210 Students |

|  |             |                                  |                                  |
|--|-------------|----------------------------------|----------------------------------|
| <b>Hybrid</b><br>1 hr recitation &<br>2 hrs online lecture | 70 Students | 620 Students<br>(Online Lecture) | 620 Students<br>(Online Lecture) |
|  | 70 Students |                                  |                                  |
|  | 70 Students |                                  |                                  |
|  | 70 Students |                                  |                                  |
|  | 70 Students |                                  |                                  |
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|  | 70 Students |                                  |                                  |
|  | 70 Students |                                  |                                  |
|  | 70 Students |                                  |                                  |

*Learning outcomes:* By the end of this course students should be able to: 1) identify and describe the components of variables in a psychological experiment, 2) recognize psychology concepts and apply those concepts to their daily life, 3) apply psychological concepts to explain everyday behavior, and 4) interpret headlines and findings reported in popular media.

*Assessment plan:*

- 1) Three large exams – in the large lecture sections
- 2) Online version we dropped the exams in exchange for quizzes – series of quizzes that test application (open book) – we want students to learn how to apply the concepts – a truer test of our main learning objectives – written assignments and discussion forums

## Section 5: Research Findings:

**5.1 Participants:** There are nearly 3216 students who take this course over an academic year – spring and fall semesters. Students come from more than 40 majors.

**5.2 Student Course Evaluations:** Students’ qualitative responses to end-of-semester course evaluations were “near uniformly” positive. Students expressed positive reactions to the course format, stating that the recitations targeted the most important material in the course text book. Students’ expressed a fondness for the hybrid nature of the course – they particularly liked the small class size and the opportunity work with the same small group of people within their smaller recitations. Additionally, students’ found the in-class activities helpful in that some of the activities helped situate course content into varying perspectives.

**5.3 Measures of Student Engagement and Performance:**

**Student Engagement:** Student attendance was higher within the hybrid sections of the course than it was within the traditional lecture sections – 95% versus 60% respectively. Within the hybrid sections, a portion of students' grades was connected to attendance.

**Student Performance:** The average score on weekly video lecture quiz scores was 86%. Excepting engineering students, students' final exam scores, when analyzed within students' primary fields of study, tended to be higher within hybrid sections of the course. The five primary fields of study, within which the more than 40 different majors were represented, consisted of: 1) Psychology, 2) Health and Human Sciences, 3) Undergraduate Studies, 4) Science, and 5) Engineering.

- Approximately 73% of Psychology majors scored an A or B in the course within the traditional lecture sections while approximately 87% of Psychology majors scored an A or B within the hybrid sections.
- Approximately 22% of Health and Human Sciences majors scored an A or B in the course within the traditional lecture sections while approximately 28% of Health and Human Sciences majors scored an A or B within hybrid sections.
- Approximately 12% of Undergraduate Studies majors scored an A or B in the course within the traditional lecture sections while approximately 26% of Undergraduate Studies majors scored an A or B within the hybrid sections.
- Approximately 37% of Science majors scored an A or B in the course within the traditional lecture sections while approximately 39% of Science majors scored an A or B within the hybrid sections.
- Approximately 20% of Engineering majors scored an A or B within the traditional lecture sections while approximately 15% of Engineering majors scored an A or B on the final within the hybrid sections.
- Approximately 60% of all students within hybrid sections obtained an A in the course, while approximately 28% of all students within hybrid sections obtained a B in the course.
- Approximately 9% of all students within hybrid sections obtained a C in the course.
- Approximately 19% of all students within traditional lecture sections of the course obtained an A while approximately 19% of all students within traditional lecture sections obtained a B in the course.
- Approximately 35% of all students within traditional lecture sections obtained a C in the course.

**Student Assessment of Learning Gains:** Students were asked to anonymously respond to an end-of-semester survey in which they were prompted to assess their own learning gains based on the course outcomes. The results of the survey suggest that students within the hybrid sections of the course perceived higher learning gains than students within the traditional lecture sections.

## **Section 6: Discussion**

### **What does this research suggest about teaching and learning within this particular discipline?**

One of the most interesting aspects of the research findings is that student performance, as measured by final course grades, tended to be higher within hybrid sections of the course compared to the traditional lecture sections, for students in all fields of study except engineering. What is it about the lecture sections that enhanced engineering students' performance in the course? Is there a correlation between engineering students' preferred ways of learning and their course grades? What is it about the hybrid sections of the course that facilitated students' performance from all other fields of study within the course? Is there a correlation between their preferred ways of learning and their course grades?