The Experiences of Undergraduate Psychological Science Researchers

An Honors Thesis (ID 499)

by

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Scholarly publication is one important activity of professors. Those

who do not publish are often not well respected and often not long

employed. In psychology, most professors publish research. There are also

several good reasons for undergraduate students to be involved in research.

Having had research experience can help a student get into a graduate

school. According to Kiernieshy (1984), many graduate programs consider

undergraduate presentations and publication important criteria for being

admitted. Research experience can also help a student decide if they wish

to make research a career. Being involved in real research is one of the

best ways a student can find out if they really want to be a researcher.

The majority of professors in psychology who do research at Ball State

have students who assist them in their work. This cooperative effort in

research is mutually beneficial. Professors can be much more productive

with student's help and students can get valuable experience.

Several articles have been written about implementing student

research assignments in the classroom (Lutsky, 1986; Chamberlain, 1988).

The authors agree that the experience is valuable for students. Lutsky

concluded that after doing research in class, students reported greater

understanding of the use of computers and statistics. They also became

more aware of the complexities and ambiguities inherent in research.

Little research has been done, however, about students who research

outside of the classroom. Palladino (1982) concluded that "little attention

has been paid to the role of undergraduate research in contributing to

mainstream psychology, or how to train and encourage the brightest

students to continue in the field and contribute to the scientific

development of the profession." Palladino went on to take the position that

the best students should be given every opportunity to experience the

entire research process.

There is general agreement among professors that students benefit

when they work as research assistants (Palladino 1982;Chamberlain 1988;

Lutsky 1986; Starke 1985; Kiernieshy 1984). But are students really

benefiting? How do we know? At Ball State, there is no record of how

many undergraduate researchers work in the Psychology department. More

importantly, there is no record indicating the aspects of research in which

these students are involved.

After interviewing several Psychology undergraduate researchers

extensively, many questions arose that need to be answered to find out

what students are gaining from their experience at Ball State. For example,

why do students start research? Do they get every opportunity to

experience the entire research process? What do students think about the

research facilities at Ball State? Also, what type of recognition do

students receive for their work? The goal of this project was was to

determine what the typical experiences were for undergraduates who do

research in Psychology at Ball State University and to try to answer the

questions posed above.

Methods

Subjects

The names of undergraduates who had recently done reseach were obtained

from the professors in the Psychology department and from other

undergraduate researchers. All undergraduate researcher currently working

in the Psychology Department or recently finished were included and they

all agreed to fill out a questionnaire. The subjects were 13 Males and 22

Females. Sixteen of them were in their junior year of college, 12 were

seniors and 4 were graduate students. Thirty-three of the students were

psychological science majors, one was a social studies major, and one

was a marketing major. All had done reseach with a faculty member of the

Department of Psychological Science. The mean G.P.A. of all of the

undergraduate researchers was 3.5.   The mean for how long the students had

been doing research was 11.9 months.

Procedure

Each student filled out a 9 page questionnaire about their research

experiences. The qustionnaire took about an hour to complete and was filled

out by the students at their leisure. Students who did not complete the

questionnaire and return it within 2 weeks were called and reminded to

return the finished questionnaire as soon as possible. All students returned

the finished questionnaire.

Results and Discussion

The results and discussion section is divided into three parts. The first

section deals with questions such as why students started, who they worked

with and how many projects they did. The second section talks about the

actual research experiences. Here comparisons are made between the first

project the student has worked on and the last project that they worked on.

The final section concerns with the student's evaluation of Ball State's

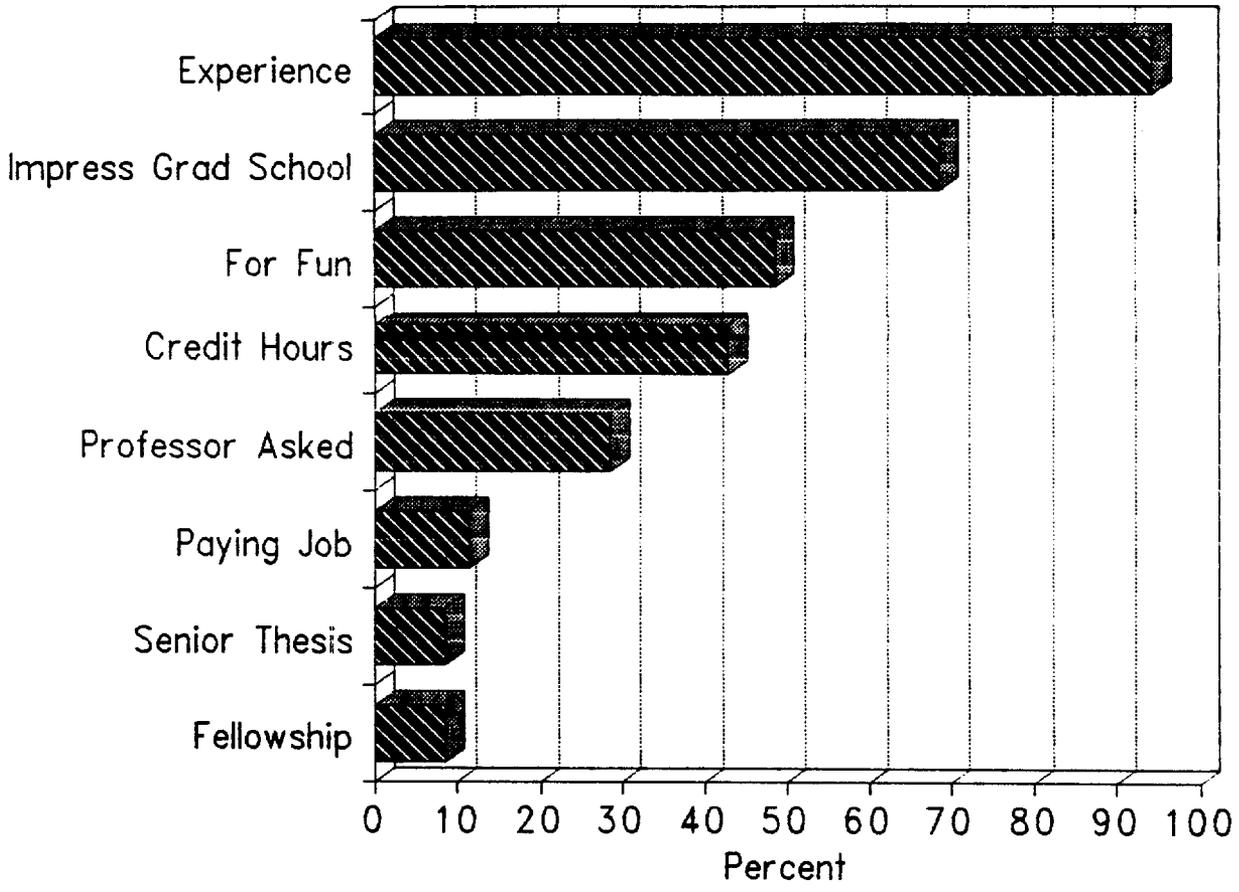reseach facilities and their personal overall research experience.

Section 1

Why did you start research?

Students could select as many reasons for starting research as they wished.

The majority of students started research either for the experience or to

impress graduate schools (see Figure 1). This is not surprising considering

the tough competition students face in applying to Psychology programs. The

next most common reason was "for the fun of it." Though, some may be

surprised at the large number that gave this response, it is encouraging to

think that undergraduates consider their experiences with research as being

fun. The next most common reason for starting research was to receive

credit hours.

Figure 1 : Why Did You Start Research?

Experience	
Impress Grad School	
For Fun	
Credit Hours	
Professor Asked	
Paying Job	
Senior Thesis	
Fellowship	

0   10   20   30   40   50   60   70   80   90   100

Percent

<u>Did you ever receive credit hours for research?</u>

Of the 35 students, 27 students had received credit hours for their

participation in research. Below is the breakdown of what classes in which

they received credit.

Psych 497 - 27 students

Psych 498 - 9 students

ID 499 - 5 students

Psych 497 is titled "Supervised Empirical Research Experience" and is

described in the undergraduate class catalog as "experience in the collection

of behavioral data in the field or laboratory setting. Students work closely

with a supervising faculty member." Psych 498 is called "Independent Study

in Psychology" and is described as "independent study and research to be

chosen and investigated in consultation with instructors with special

competence in the area involved." Both classes are basically research

experience with a professor.

ID 499 is the class that students who are enrolled in the Honors College

take to complete their requirements to graduate from the Honors College. To

receive credit in ID 499, the student must complete a creative or research

project. Most psychology students do Psychology research to complete this

requirement.

Have you ever received a fellowship or grant?

Only a minority of the students had fellowships or grants. Seven students

(20%) had received an undergraduate fellowship to do research with a

Psychology professor. Four of the students (11%) had received an

undergraduate research grant some time during their research experience.

How many professors have you worked with?

The majority of students (69%) have only worked with one professor

(see Figure 2). However, some students have worked with as many as four

faculty members (5.7%).

Figure 2 : Percent of Students

by Number of Professors with whom

Students have worked

4 profs (5.7%)

2 profs (28.6%)

1 prof (62.9%)

3 profs (2.9%)
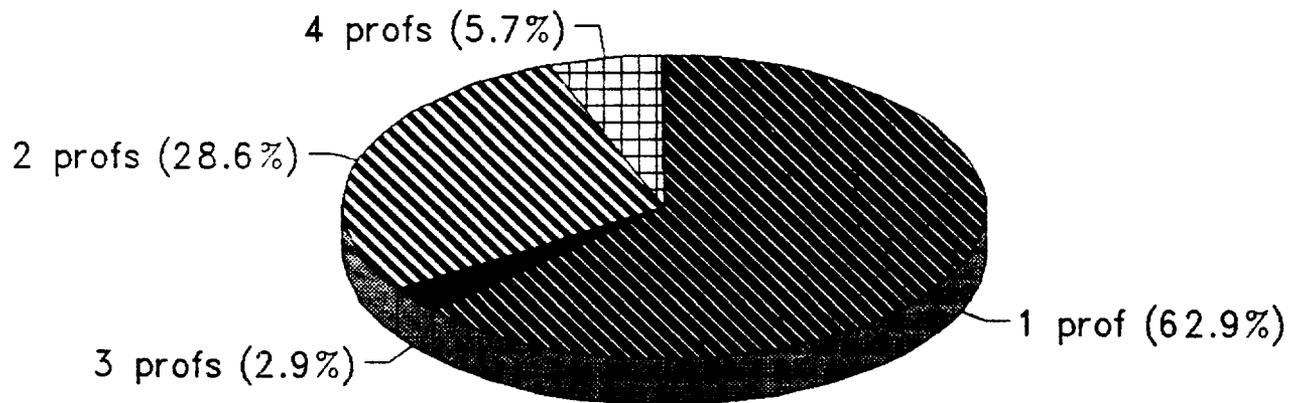
How many projects have you worked on?

The average student had worked on 2.5 different projects. The range of number of projects that were worked on was from one to ten. It is interesting to note that on the average, students are not likely to quit after just one project. Most (22 of the 35) completed two or three separate research projects.

What new things have you learned?

Most students responded to this open-ended question. Students listed a variety of new skills that they had learned as a result of their research experience. A listing is given in Table 1 organized into major groups. Basically, the skills that were listed could be broken into three sections: Computers, technical equipment, and research skills.

The students also listed the things that they had learned that were not taught in classes at Ball State and which they considered useful. These answers are summarized in Table 2. The most common response was that the experience of doing real research taught them how to conduct research better

Table 1

New skills that students learned because of their research.

8 students said they had learned no new skills.

Computer
  Macintosh / VAX / Apple II
  Control language for SPSS-X
  transfering data via phone lines
  statistical packages

Other equipment
  slide projectors
  physiograph equipment
  pupilometic equipment
  VCR / video equipment

Research skills
   professional writing
  critical review of research
  presentation of research / how conferences are run
  applying statistics
  how publication process works
  how to find resources / organization of materials
  hypothesis forming
  working with human subjects
  animal care
  IRB
  what it is like to be a professor / researcher

Table 2

What students learned from research that was not taught in classes at Ball State.

Three answered that they learned nothing new from research.

7 answered- The experience of doing real reseach taught me how to conduct research better than the class did.

5 answered- How to apply statistics

4 answered- How to use a subject pool

3 answered- IRB

3 answered- reseach realities

2 answered- time it takes to do an experiment

2 answered- taught me to have patience

2 answered- how to handle human subjects

. . .Taught me how to use equipment associated with research

. . .Dedication and hard work

. . .Learned the importance of trying to control all the extraneous variables so they don't interfer with your results

. . .How to submit articles

. . .The processes necessary to get research approved

. . . I learned how to conduct research in an ethical and efficient way.

. . . How the publication process works.

. . .The importance of developing critical thinking skills.

. . .Data analysis is much more complicated in reality than in Psych 284

. . .Disipline, acceptance of failures, flexibility, problem solving, important of research, how to improvise.

. . .computer skills

. . .What is necessary for grad school and GRE

. . . How to talk to people over the phone comfortably

. . . communication skills

than they had learned in required courses, including a methodology class. The second most written comment was that they learned how to apply statistics. Disconcerningly, three students answered that they learned nothing new.

Section 2

In this section, comparisons are made between the experience the student had on their first project they worked on and their most recent project. Only 22 of the subjects had worked on more than one project. The results of these 22 are summarized in Table 3.

Whether working on the first project or their last, most students spent a little less than 10 hours a week doing research activities. This happens to be about the same amount of time as the average campus job. It is also about the same amount of time that the freshman handbook suggests that a student dedicate to a three hour class (3 hours in class plus 6 hours homework).There were no significant differences between first and last project on the amount of time spent working on the project and amount of time spent in scheduled meetings with the professor.

Table 3. Comparison of first and Last Projects

	First Project		Last Project
	N = 22	(N = 35*)	N = 22
Hours spent weekly on project.	8.4 hours	(7.2)	9.2 hours
Time met with prof for scheduled meetings.	43 min	(62)	54 min
Time met with prof on a "drop in" basis.	44 min	(45)	77 min **
(1 to 10 scale) Understanding of research.	7.7	(7.7)	8.8 **
Communication between professor and student.	7.5	(7.2)	9.0 ***
Understanding of statistics.	6.2	(5.7)	7.5 **

* the number in parenthesis is the mean for all 35 students for their first project.

** significant at .05

*** significant at .01

Students spent more time with professors on later projects than on their first projects. Though there were no significant increase in scheduled time met with professors, the students were more likely (p<.05) to spend time dropping in on their professors to discuss the research on their last projects. This may be because after working with a professor for a while the student has more responsibilities and needs to consult with the professor on different problems than occur. It could also be that after working with the professor for awhile, the student feels more comfortable about dropping in to talk about the project on a casual basis.

There were significant differences in how well the students felt they understood the research, the statistics used, and how well they felt they communicated with the professor. As you can see in Table3, the level of communication between student and professor significantly improved over projects. Though the understanding of statistics did improve, the rating was still low compared to the students overall understanding of the research.
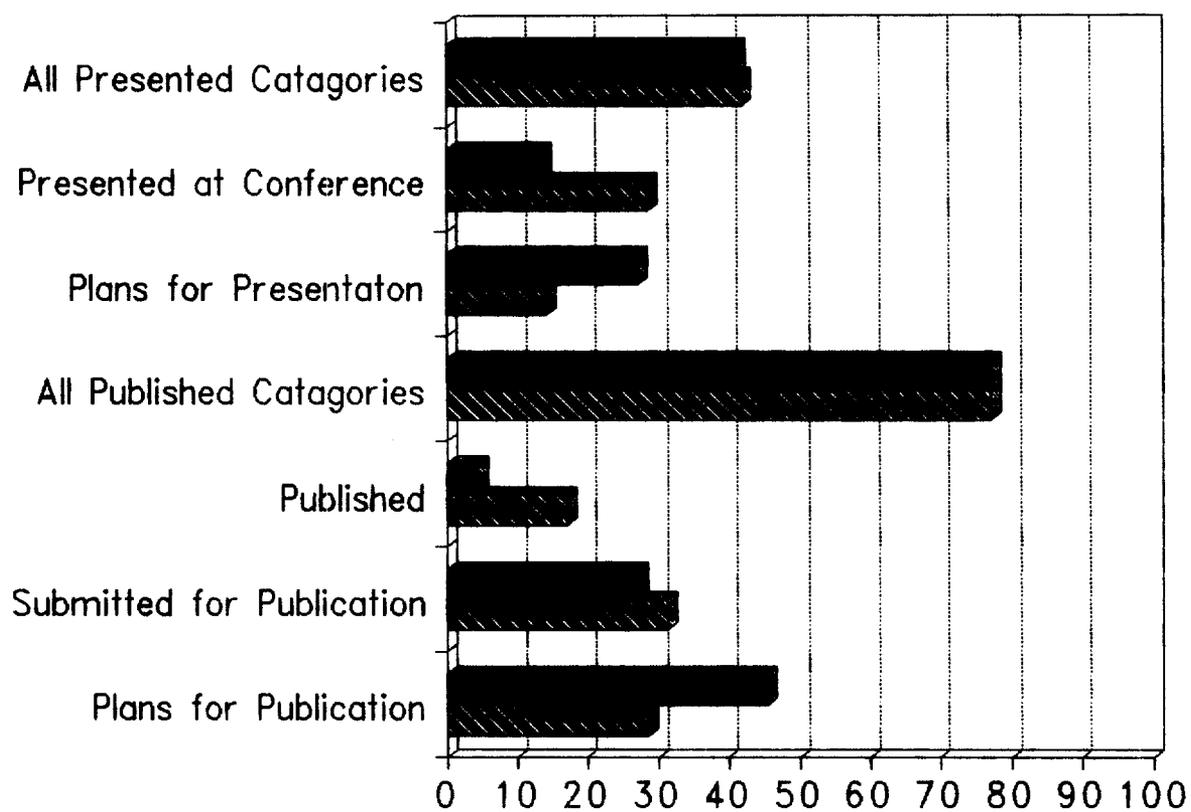
Results of Project?

The results of projects are summarized in Figure 3. None of the

differences between first and last project were significant. It seems that whether the student was working on their first or last project, the project was just as likely to be published or presented at a conference. Looking at the percentages for the first project results, it is interesting to note that 77% of the students had their project published or hopes of being published. For second projects, this percentage is also 77%. The number of students who had results of a project they had worked on presented at conference or plans for a presentation, was also the same for both first and second projects (41%). There was a slight tendency (non-significant) for first projects to be further along than second. This is apparent in the fact that first projects were more likely to be published or submitted for publication while second project were more likely to be in the plans for being submitted stage.

Most students received some recognition for their contributions (see Figure 4). Only 12% received no recognition for their work on their first project. A student was seldom first author for the first project they ever worked on. They were more likely to be second (or third) author or mentioned in footnotes (X (3) = 15.375, p<.01). This is not surprising considering new researchers may not yet be capable of planning, running and writing up a

Figure 3 : Results of Project
for 1st and last project worked on.

All Presented Catagories

Presented at Conference

Plans for Presentaton

All Published Catagories

Published

Submitted for Publication

Plans for Publication

0 10 20 30 40 50 60 70 80 90 100

whole research project. For the last project that the student worked on, there were no significant differences between the type of recognition received. Lack of significance could be because the N was so small. Looking at percentages in Figure 4, we can see that the student was still more likely to be second or third author than first. When comparing recognition from the first and last project, there were again no significant differences.

Which parts of research were you most involved in?

It is interesting to note what aspects of research students were most involved in. These results are shown in Figure 5. Equal involvment would be a mean of 5. Confidence intervals (based on standard deviations of all questions) are shown as vertical lines to the left and right of the middle of the scale. Bars outside of the confidence intervals are significantly different from 5.0. For first projects worked on, no students were involved in writing grants and few in writing IRB's. Students also indicated very low involvment in presenting results, library research, writing and revising paper, forming the initial hypothesis and constructing questionnaires. Scores were very high, for running subjects and storing data on computers. Students judged
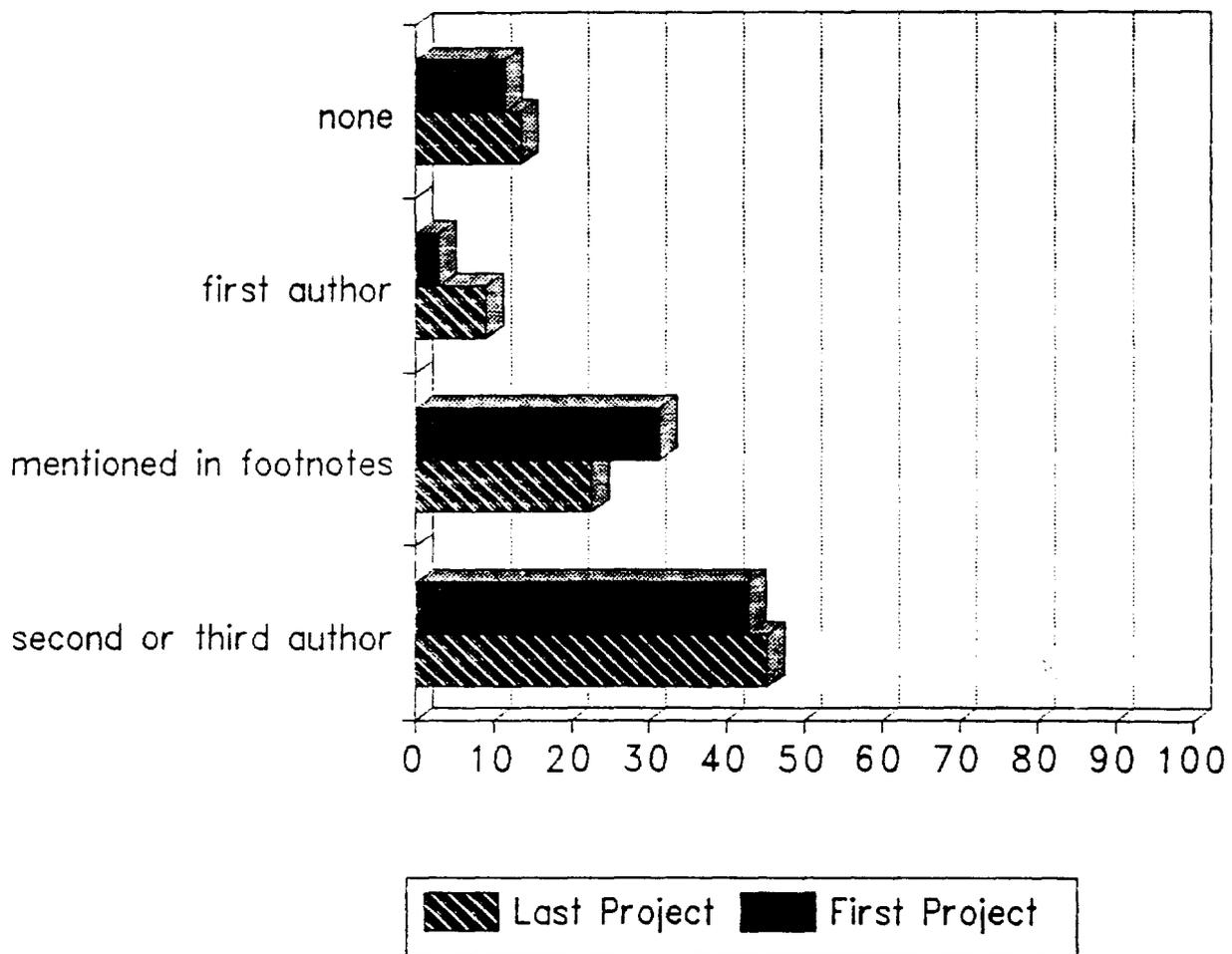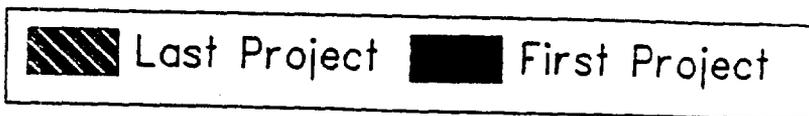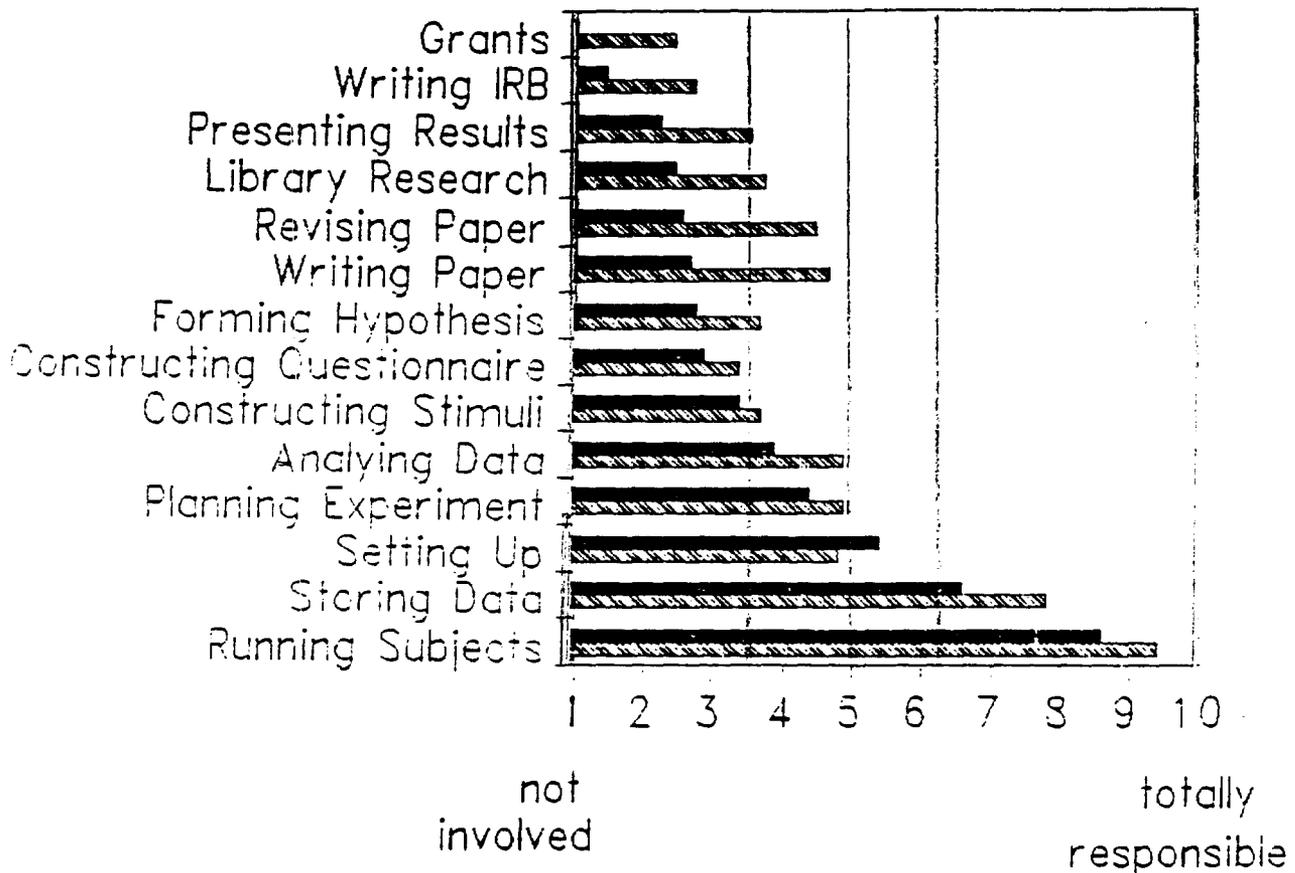
Figure 4 :Public Recognition

Figure 5 : Involvement in Research for 1st and Last Projects.

Grants
Writing IRB
Presenting Results
Library Research
Revising Paper
Writing Paper
Forming Hypothesis
Constructing Questionnaire
Constructing Stimuli
Analying Data
Planning Experiment
Setting Up
Storing Data
Running Subjects

1 2 3 4 5 6 7 8 9 10

not
involved

totally
responsible

▨ Last Project   ■ First Project

relatively equal involvement of professors and themselves for the other parts of research including constructing stimuli, planning experiment, setting up experiment, and analyzing data. It seems that the for the first project worked on, professors are more responsible for the beginning parts of research (forming hypothsis and library research) and for all aspects of writing (IRB's, grants, writing and revising papers) whereas the students are responsible more for the repetitive work of running subjects and storing data. The data seems to show a definite division of labor in research for first projects.

The amount of involvement does even out more for the last project worked on. Student are more likely to be involved in all aspects of paperwork and writing for the last project than their first, though, they still are significantly different from 5.0 for writing IRBs and grants. No matter which project the students is working on they are likely to be almost solely responsible for running subjects and storing data.

Section 3

<u>How satisfied were you with university services?</u>

It seems that the students were generally very happy with the services that the University is providing. Figure 6 shows the students' ratings for satisfaction with services connected to their research. The number to the right of the heading is the number of students that responded to this question. The resource that the students rated the highest were the Psychological Science Department Secretaries, Alison Gillespie and Cindy Ruman. They were also the resource used by the most students (30). Government Publications in Bracken Library was given the lowest rating (having looked for sources there myself, I can understand why). This rating, though the lowest, was still above 6 on a ten point scale.

<u>What did you like and dislike about your professor?</u>

In Appendix A and B are the comments about what students liked and disliked most about the professors with whom they worked. I tried to edit only for clarity, length and protection of the student and leave the heart of

Figure 6 : Satisfaction with Services
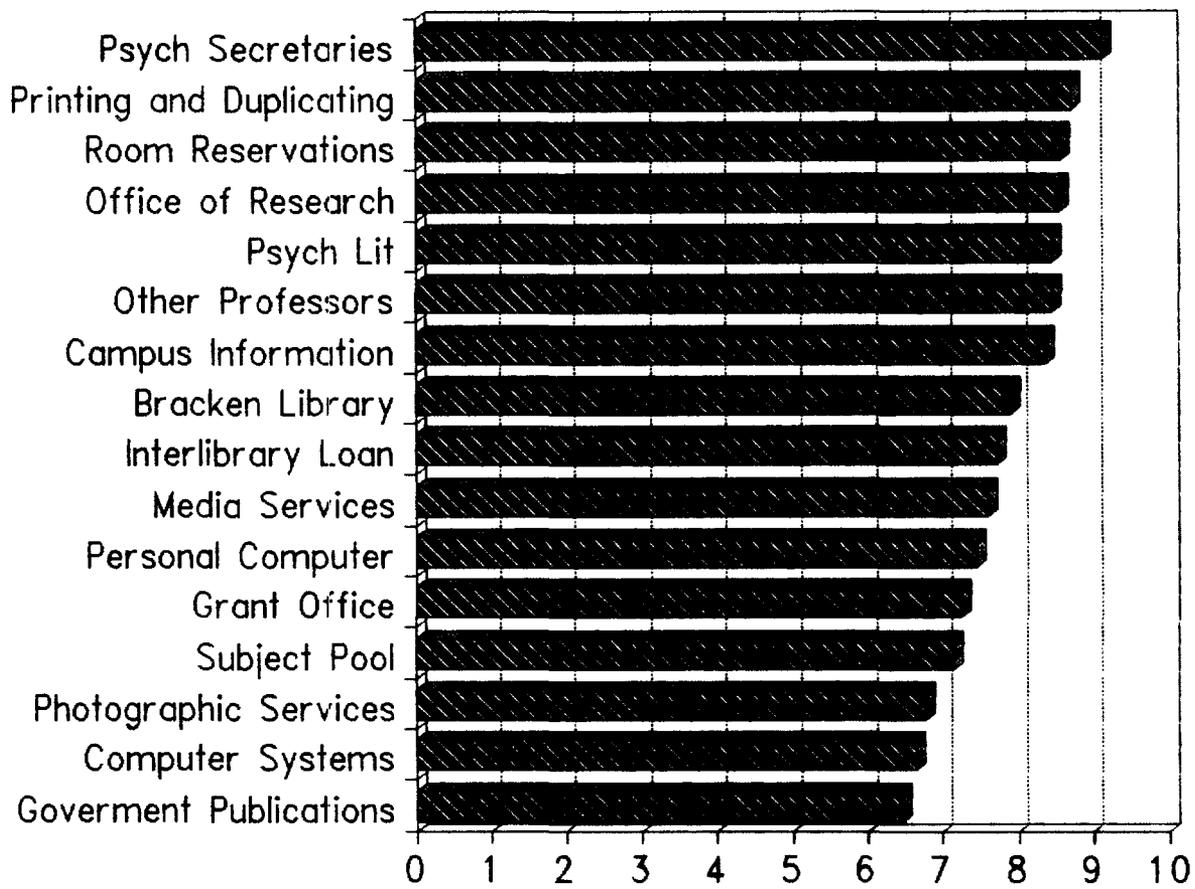
the comments complete. All students had positive comments to make. Many wrote extensively about personality traits, communication style, and the general benefits of working with a professor. The students were also able to make many comments on their dislikes. 13 students could not find anything negative to say about the professor that they worked with.

What were your worst and best experiences?

The students also made replies to an open ended question about their worst and best experience with research (Appendix C & D). Of the 35 students who completed the question, an amazing 43% (15s) answered the same for worst experience; no shows while running subjects. Six students answered, subjects who don't care about the experiment or who are rude to them. No other comment appeared more than twice on this question. For best experience, the answer written most often was "the experience I got doing research." Most of the remaining comments were more specific and show a wide range of experiences.

Future plans concerning research?

Of the 35 students interviews, 30 were currently doing research. (Four had stopped because they had graduated. The other stopped while still an undergraduate.) Of the 30 students still doing research, 24 planned on continuing doing some type of research until they graduate. Six students planned on stopping at the end of the present school year.

For those who had already stopped doing research or are planning on stopping, lack of time was the biggest reason (64%). Lack of interest in the project accounted for another 28% of students stopping. Only one student stopped because of a problem with the professor with whom they had worked.

Before they began research, ten students had thought about a career in research. After being an undergraduate researcher, 15 were considering a career in research. Eighteen students said that the research experience influenced their decision.

General Evaluation

Students were generally positive about their research experience. If they were able to "do it all over again", all thirty-five would have done research.

Nineteen said they would have started earlier. Only one would have started later. Thirty-two would have worked with the same professor. Two were unsure.

When asked to rate their overall experience with research on a 1 to 10 scale with 1 being horrible and 10 being the best experience of my life, the mean score was 7.367. The range was from 5 to 9. (One student who gave a rating of 9, commented that the only better experience she had was her wedding day. Another student who gave a rating of 5 said, "no offense, but it's going to take one 'sad' individual to rate BSU research a 10 according to your scale")

When asked what they would like to change about the way research is done at Ball State a variety of answers were given(see Appendix E), but two were mentioned fairly often. Nine students wanted the subject pool improved so the no show problem would be solved. Seven students thought that other students should be encouraged more to do research and should find out about research opportunities sooner.

Conclusion

Most students start research to get experience and inpress graduate
schools. Though some have to quit because they can not afford the time
commitment, most continue until they graduate. While they are
undergraduates, most receive credit hours for their work and a few receive
fellowships or grants.

For first projects, few students ever take any part in forming the
hypothesis or doing any type of writing. Their primary responsibility is
running subjects and storing data. While I can understand the necessity of
students running subjects and count this as part of "paying their dues", it is
crucial for students to become involved in every aspect of research for the
student to have the best learning experience as an undergraduate researcher.
One student commented that she enjoyed "seeing a experiment through from
beginning to end; running subjects to data analysis." She was apparently quite
ignorant of the importance of library research and diseminating research at
conferences and in journals. This student was not benefiting from her

research experience as much as she could have been.

As the student works on more projects, they tend to spend more time with their professor and have a better understanding of their research and the statistics used. However, students are still primarily responisble for running subjects and storing data on computers. It seems students are not being involved fully in every aspect of research.

The students had few negative comments about the services that Ball State University does for its researchers. There was no service that was rated below 6 on a 10 point scale. As for the professors that the students worked with (though there is room for improvement) there were many more positive comments than negative ones. The same can be said about the students best and worst research experiences. I was shocked, however, at how many people answered this open-ended question the same. Subject pool no shows were the worst experience for almost half of the subjects. Since undergraduate researchers seem to spend most of their time running subjects, it is natural that this would be a big concern. Improvement on the subject pol was also the thing that students would most like see changed about the way research is done at Ball State. One student commented that he once had 20

students signed up at half hour intervals and only 4 actually showed. Eight hours of this student's day were spent waiting for subjects that never came. This is a large problem when most students have such busy schedules.

Overall, students felt very positive about their reseach experience at Ball State. All of the students would have done research again and on a one to ten scale, all subjects rated their experience as a 5 or above. Though some students were not able to think of a single thing that they had learned from their research experience, it seems that overall, students are benefiting.

Appendix A

**Students comments about what they liked best about working
with their professor(s).**

The prof was
. . . very relaxed and patient
. . . very personable
. . . helpful and caring. Interested in helping me advance.
. . . very professional. Kept me informed about what was going on and
treated me with respect.
. . . well informed, knowledgable, easy to work with.
. . . flexible and helpful.
. . . the voice of experience.
. . . flexible about when I worked / sympathetic about my schedule
. . .very knowledgable and happy to share knowledge, took the time to
explain any concepts about the research that were unclear to us.
. . .knowledgable about computers and the systems one must go through to
do research.

The prof. . .
. . . had a good sense of humor and laid back disposition that kept the whole
routine relaxed.
. . . showed me I didn't want to do research.
. . . let us actively participate in much of the designing of the experiment
without putting us in any type of uncomfortable situation.
. . . made me feel involved. They tried to include me in what they thought
was a reasonable amount of work and explain statistics to me.
. . . gave detailed explanations about the research.
. . . allowed me to develop a topic of my own / encouraged me to do my own
work.
. . . helped us to think of the future and prepare for graduate school.
. . . talked on my level.
. . . increased my knowledge of research procedure.
. . . showed interest in me.
. . . answered my questions well.

. . . gave me alot of freedom to learn and make mistakes.

. . . took the time to explain research and help with any questions.

. . . gave me professional insight in how to form a hypothesis and execute an experiment.

Working with prof. . .

. . . gave me an opportunity to see how real research is done.

. . . let me feel like part of the department.

. . . gave me an experienced referent to learn more about the research process.

. . . gave me a chance to know professor personally and find out about their past experience.

. . .let me talk with professor as a person. I felt comfortable with them.

. . .gave me a chance for greater student falculty interaction. Got a chance to talk to professors instead of just listening to lectures.

. . .let me learning by experience instead of lectures

. . . let me study subject matter that was interesting.

Best part of working with prof was. . .

. . . being a part of making the stimuli and following through on the steps of research to the end when the data is analyzed.

. . . the guidance, teamwork , cooperation, encouragement.

. . . discussing, theorizing and deciding on the experimental direction.

. . . personal contact / advice / help

Appendix B

What students disliked about working with the professor(s).

13 students had no negative comments about their professors.

Prof. . .
. . .was restricted in time.
. . . expected me to know too much about design and procedure.
. . . told my research partner and myself different information so that neither of us knew what was going on.
. . . did not keep me informed so I was not very involved.
. . .not organized.
. . .was too busy for discussion.
. . .did reseach that did not interest me.
. . . expected me to understand things I had never learned before.
. . .had an attitude which was condensending toward undergraduates.
. . . we had personal differences of opinions which kept me from wanting to work on his research projects.
. . . we had occasional lack of communication.
. . .we had problems finding a time to meet.

Worse part of working with prof was that . . .
. . .nothing became of a year of experience, which was very discouraging.
. . . I worked alot of hours with no credit.
. . .alot of time spent running subjects was not profitable
. . . I would had liked to have had more part of the planning and setting up of the experiment.
. . .I didn't work with the professor, I worked for the professor. I thought it would be different.
. . . I did not really understanding big picture, just did my little tasks without knowing whole story.
. . . the research was podunk.
. . . I didn't have technical or programming experience so prof had to do alot of work that should have been my responsibility. (my fault, not his)
. . .I sometimes didn't understand what they were talking about. I wanted to, but it was over my head.
. . . I disliked calling back subjects

Appendix C

Student's worst experiences with research.

15 answered - No shows while running subjects
6 answered - Subjects who don't care or who are rude
    (especially a problem during finals week)
2 answered - writing up paper (tedious)
Lost data because of computer malfunction
I didn't understand how experiment worked and I was expected to take
over the following sememster.
Trying to manage my time
The space office double booked rooms and twice I was suppose to run an
experiment during someone's class.
Hamsters died - very frustrating, had to give up research
Trying to get equipment from the library that worked
Feeling like I was being pushed out of the project
Being falsely accused by my prof of lying and not doing my job.
Having different views than my prof.
Tedious paper work

Appendix D

Student's best experiences with research.

6 answered- the experience I got doing research / knowledge gained
4 answered- Getting a publication
4 answered- Working with subjects relationship with prof
3 answered- Feeling like we accomplished something
3 answered- Working with other members of the group
Doing research made me feel important
Understanding where problems occur when studying people
Prof helped me assimilate my freshman year.
Reaching the point when I felt equal to my prof in knowledge of the research subject.
Doing a presentation of the results
Analysing the results
My prof telling me a had done a good job.
Mastering the physiograph machine
Understanding the differences in people
Running subjects at Burris and talking to the teachers
Subjects being curious about the study
The day my thesis was excepted for a grade.
Finally getting my own project
Getting to watch subjects on video who didn't know they were being taped
  because they didn't read the consent form do stupid things.
Learning to problem solve on structured experiments
Being able to explore what I was interested in.
Doing all the work and then finding out our hypothesis was supported
Adding to the body of scientific knowledge

What students would like to change about the way research is done at Ball State.

9 answered - improve the subject pool
    by penalties for no shows
    by better wayfinding
7 answered - let students know about research opportunities sooner/
        students should be encouraged to do research
4 answered - I would change nothing
More student grants
The process for grants is very time consuming and tedious
More cooperation between departments (i.e. Bracken, research office)
Better location for running subjects
A journal on campus for student articles / student presentation day
Students should be involved in all parts of research
Profs should do more research so more students can be involved
Give more people a chance to do research
More emphasis placed on experimental psychology
Have an orientation to subject pool
I want to know what other students are researching
Let more students do their own research

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Mortor Board Honor Society
Psi Chi, The National Honorary in Psychology
Ball State Student Honors Council, Education Chairman
Student Voluntary Services, Program Coordinator
Cardinal Corps
Botsford Hall Cultural Committee
Bots/Swin Social Commitee, Chairman
Federation of Christian Athletes
Botsford Hall Council

Honors/Grants: Admitted with Distinction
Undergraduate Research Grant
Undergraduate Fellowship, 1989-90
Junior Marshall
Alpha Lamda Delta Honorary
Blue Key Honorary
Golden Key Honorary
Phi Society
Dean's List

Scholarships: Emens Scholarship
Noll Scholarship
Kilbourne Scholarship

Presentations:
Butler, D. L., Kirkhoff, K. L. & Kamor, K. A. (March 1989)
"Spatial Skills", Presentation at Sigma Xi: "A Scientific
Fling" Muncie, IN

Kirkhoff, K. L. & Butler, D. L. (October 1989) "Effects of Complexity and Familiarity on Mental Rotation" Sigma Xi Research Poster Session, Muncie, IN.

Kirkhoff, K. L. & Salasoo, A. (August 1989) "Designing User-friendly Interfaces" Presentation at Bellocore, Morristown, N.J.

Research Experience:

I have been doing research with Dr. Darrell Butler for two years. We have been doing work investigating spatial skills and perception. From this research, I have gained experience in experimental design, setting up experiments, technical writing, and working with human subjects.

During the summer of 1989, I did research at Bell Communications Research with Dr. Aita Salasoo. We designed the user interface part of a computer software application. We then did usability testing using pyschological methods to test this application. At Bellcore, I gained experience with video equipment, MacIntosh and computer systems.

Work Experience:

Undergraduate Fellow, Ball State University	1989-1990
Staff Technologist, Bellcore	summer, 1989
Laboratory Assistent, Ball State University	1988-1989
Cashier/Bookkeeper, Scott's Foods	1984-1986

References:

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