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An Evaluation of the Impact of a Thesis Colloquium on Self-Regulated Motivation toward Thesis Completion

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AN EVALUATION OF THE IMPACT OF A THESIS COLLOQUIUM ON SELF-
REGULATED MOTIVATION TOWARD THESIS COMPLETION

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts

By
Frank Nicholas Reding

May 2010

AN EVALUATION OF THE IMPACT OF A THESIS COLLOQUIUM ON SELF-
REGULATED MOTIVATION TOWARD THESIS COMPLETION

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67 Pages

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What motivates one to write a thesis? This study assessed whether presenting one's master's thesis proposal at a thesis colloquium increased the probability of Industrial/Organizational I/O Psychology graduate students completing their thesis on time (i.e., finishing their thesis as they finished their graduate coursework). This study also examined the relationship between presenting one's thesis proposal at a thesis colloquium and different forms of motivated regulation and three basic psychological needs (autonomy, competence, and relatedness).

Participants included 94 master's level I/O Psychology alumni from four universities. As expected, students who presented at a thesis colloquium had a higher rate of on-time thesis completion. Students who presented at a thesis colloquium also reported a higher level of intrinsic and extrinsic motivation toward their thesis, and a lower level of amotivation toward their thesis compared to students who did not present at a colloquium. Reported level of relatedness toward individuals who helped work on the thesis was higher for those who presented at a thesis colloquium than for those who did not present. However, there were no differences between those who did or did not present at a colloquium in terms of reported competence and autonomy.

An Evaluation of the Impact of a Thesis Colloquium on Self-Regulated Motivation Toward Thesis Completion

Quite possibly, the worst status a graduate student can achieve is that of all but thesis (ABT) or all but dissertation (ABD). These two acronyms refer to graduate students who have finished all the necessary coursework to graduate, but have yet to complete their thesis or dissertation (master's level for ABT and doctorate level for ABD; Monsour & Corman, 1991). Some important categories of variables that have been found to delay dissertation and thesis completion include situational, program specific, cognitive, and affective or personality factors (Green, 1997).

The inability to complete a thesis is sometimes known as thesis blocking. Rennie and Brewer (1987) described thesis blocking as a point where students feel compelled to work on their thesis, but find themselves at a loss for what to do next. It is essentially writer's block for a thesis. Rennie and Brewer stated that thesis blocking can effect parts of the thesis or the thesis as a whole, resulting in students being unable to come up with a research topic, finding that conducting a full literature review is very time-consuming, and being stopped by a number of other obstacles along the way to completing a thesis. The current thesis focuses on the early effects of thesis blocking, that is, procrastination, stress, and a lack of knowledge of how to start a thesis. The effectiveness of a thesis colloquium is studied to determine its ability to motivate students to choose a topic, start their literature review, and to put the first words of their thesis down on paper. For many graduate students that fail to complete their degree, it frequently is the thesis or dissertation that is the obstacle. This study was prompted by the efforts of a master's level I/O program director who attempted to increase the on-time completion of degrees

by implementing a fall colloquium series in which second year students were required to present their thesis plan. The intent of the colloquium was to encourage students to get an earlier start on their thesis and, thereby be more likely to complete the thesis on time.

In this thesis, the benefits of writing a thesis, as well as the barriers to writing a thesis, will be discussed. After, previous research explaining Self-Determination Theory (SDT; Deci & Ryan, 1985) and how it applies to thesis colloquia will be discussed. The influences of the three psychological needs, autonomy, competence, and relatedness, will be considered. Finally, the researchers will discuss the limitations of previous research, as well as the design and hypotheses of the current study.

The Benefits and Barriers to Writing a Thesis

There is a lack of previous research on the relation between mandatory colloquia and completing a thesis or dissertation. This section will focus on skills developed throughout a thesis project and factors that may delay students from completing or cause students to fail to complete their thesis.

What is the practical importance of a thesis? Why do many schools require that students complete theses before they receive their diplomas? Shultz and Kottke (1994) stated that the master's thesis is used to develop six important competencies: organizing skills (e.g., scheduling meetings), problem solving (e.g., dealing with setbacks, conflicts, and unforeseen roadblocks), oral communication (e.g., oral proposal and defense), written communication (e.g., writing the actual thesis), interpersonal skills (e.g., communicating effectively with thesis committee members and important others), and organizational survival skills (e.g., coordinating the thesis committee). Students will need all of these skills when they enter an I/O related field. These six competencies are

foundations of the skills necessary to excel in a setting that requires a master's degree in I/O Psychology (Howard, 1991). Other skills, such as critical thinking and appraisal of previous research literature, are also developed through the thesis process (Shultz & Kottke, 1996). Previous research has found that students placed a relatively low "usefulness" ranking on their thesis, and the work entailed in completing a thesis, as compared to I/O coursework and internships (Erffmeyer & Mendel, 1990).

Beyond individual competencies gained, the communication relationship that is cultivated between the advisee (the individual writing the thesis) and advisor (the faculty member that guides the student through the thesis process), fundamentally, is very similar to relationships that will be encountered in the workplace (Jablin, 1985). Information regarding organizational values, norms, and roles are learned in the workplace through supervisors, much as they are learned through advisors in an academic setting.

There are several factors that contribute to an untimely completion of one's thesis or dissertation. Factors that have been found to be significant predictors of non-completion or delayed completion include: perfectionism (Germeroth, 1991); several forms of procrastination including low frustration tolerance, rebellion, self-denigration, insufficient reinforcement or lack of structure, and task aversion (Muszynski & Akamatsu, 1991); lack of focus; and an inability to deal with independent learning situations (Madsen, 1983). Of the aforementioned factors, the vast majority reflect dependence and a lack of motivation. Previous literature implies that perfectionism and procrastination are related and that both are expressions of control (Green, 1997).

Because there are a large number of stressors that accompany writing a thesis/dissertation, the process requires a great deal of organization (Green & Kluever,

1997). As Moore (1985, p. 129) put it, “graduate students must approach the dissertation project with the same caution one uses when crossing a busy six-lane freeway at night. Careful planning and an excellent sense of timing are essential.”

While previous research has shown the thesis process to be a crucial and beneficial aspect of graduate school, the majority of graduate students do not find it to be an important part of their graduate education (Erffmeyer & Mendel, 1990). Additionally, graduate students have to deal with a plethora of personal and environmental barriers that can push graduate students into the quagmire of ABT or ABD status (Green & Kluever, 1997). Even with all the aforementioned barriers, many students complete their thesis or dissertation and graduate on time. This may be due, in part, to the effects of SDT (Chatzisarantis & Biddle, 1998).

Self-Determination Theory

Most theories of motivation use intention as the key component (Lewin, 1951). The study of motivation looks at how the energy to engage in an activity is created and directed (Deci & Ryan, 1985). Self-Determination Theory (SDT), however, makes an important distinction between self-regulated and controlled types of intentional regulation (Deci, Vallerand, Pelletier, & Ryan, 1991). Motivated actions are self-regulated to the extent that they are engaged in wholly, volitionally, and endorsed by one’s sense of self; actions are controlled if they are compelled by some external source (Deci & Ryan, 1991).

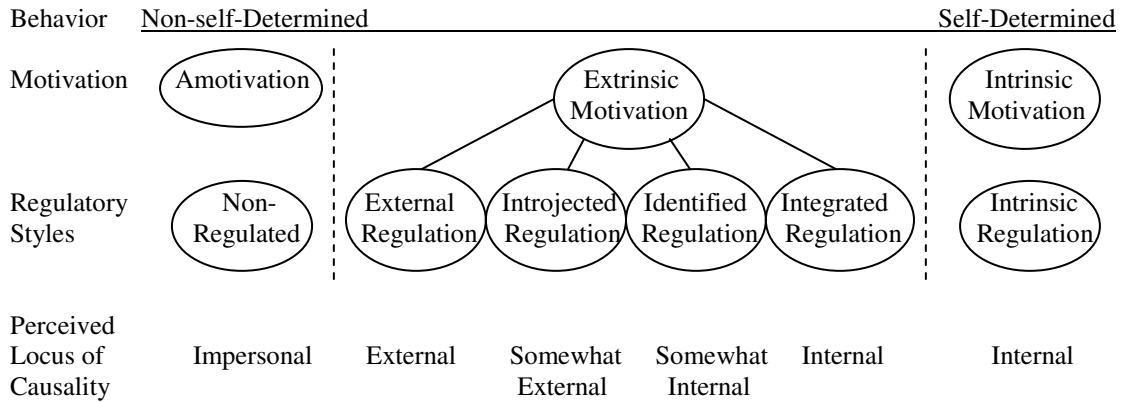
Instead of focusing simply on external factors to motivate individuals, SDT focuses on both internal and external factors that promote the internalization of tasks, values, and goals. The process by which SDT takes into consideration psychological

events, motivational processes, and perceived-locus-of-causality as determinants of an individual's social action is what enables SDT to open the door to creating long lasting, positive motivation in individuals (Chatzisarantis & Biddle, 1998; Deci & Ryan, 1985). According to SDT, the thesis is problematic because very few students, if any, are conducting a thesis because they really want to. Most students complete a thesis because it is required by the university, their respected specialty, or by their individual department. This creates the perfect catalyst for external regulation, which will be discussed shortly.

SDT is an organismic-dialectical theory that views human beings as proactive organisms whose natural or intrinsic functioning can be either facilitated or impeded by the social context (Deci, Egharari, Patrick, & Leone, 1994). Jex and Britt (2008) defined organismic theories as growth-oriented, emphasizing human beings' innate need to develop. SDT is a dialectical theory because it is the interaction between individuals and their social environments that can either aid or impede motivational growth (Deci & Ryan, 2002; see Figure 1). SDT differentiates the content of goals or outcomes and the regulatory processes through which the outcomes are pursued, making predictions for different contents and for different processes (Deci & Ryan, 2000b). This means that the amount and type of motivation a person has towards a specific task or project depends on how motivating the task is in the first place, and how motivated the person becomes while working on the project, through intrinsic and extrinsic motivators.

Figure 1

The Self-Determination continuum, types of motivation, regulatory styles, and perceived locus of causality.



Intrinsic motivation refers to a desire to work primarily for its own sake because the work itself is interesting, challenging, or in some way satisfying to a person; extrinsic motivation refers to a desire to work primarily for benefits other than the work itself (Loo, 2001). An example of intrinsic motivation would be individuals who paint for a hobby. These individuals are not painting to make money or for any other reason than the love of painting. While there is no external reward for the painters (e.g., money, fame), they still engage in painting because the act of painting itself is reward enough. An example of extrinsic motivation would be if students put effort into their theses only because their program requires that they complete their theses to earn their diplomas. One would say that these students are extrinsically motivated to complete their theses. The students are not working for any reason inherent in the thesis itself. While the diploma will only be awarded after a thesis is completed (a work component), the key is that the students are only putting effort into the work component for the diploma (an incentive outside of the work itself).

While SDT is a dialectic theory, differentiated into internal and external factors, there are actually four types of extrinsic motivation (Deci & Ryan, 1985). These different types produce qualitatively different effects on what people think, feel, and do (Ryan & Deci, 2000b). Deci and Ryan explained that these differences are based on how self-regulated or externally regulated each type of extrinsic motivator is. For this study, we are concerned with all four types of the extrinsic motivation, amotivation, and intrinsic motivation. Deci and Ryan described amotivation as the complete lack of motivation to act or to act without any intentional direction. Amotivation can also occur in the context of learned helplessness. If students feel so overwhelmed that they feel there is nothing that could be done to move forward on their thesis, amotivation occurs. The first type of extrinsic motivation involves external contingencies that individuals respond to, and are motivated through expected, tangible incentives and consequences, such as some students studying only because they feel they need to get a good grades because their parents are telling them that they need to get good grades (Deci & Ryan, 1985). These actions are called external regulation and are the most rudimentary form of extrinsic motivation (Reeve, Jang, Hardre, & Omura, 2002).

The second type of extrinsic motivation comes from external forces that cue up a demanding, pressure-inducing internalized voice, based on feelings of guilt and pride, that promote an externally-regulated type of motivation called introjected regulation (Deci & Ryan, 1985). Introjection refers to internalization in which the person “takes in” a value or regulatory process but does not identify with or accept it as his or her own; instead, the value becomes a rule for action that is enforced by sanctions such as threats of guilt or promises of self-approval (Deci et al., 1994). Deci and Ryan explained that

introjected regulation involves the regulation of conflicting urges, such as when individuals want to start eating their food as soon as they receive it, but instead wait for everyone at the table to also receive their food (i.e., Although I really want to eat my food, it is polite to wait for everyone to have their food before starting to eat and I am a polite person).

External contingencies that explain the activity's value or utility, like taking medicine because of its health benefits, promote the third type of extrinsic motivation, a mildly self-regulated motivation called identified regulation (Deci & Ryan, 1985). An example of identified regulation would be graduate students reviewing their thesis materials for a few hours before defending their thesis because defending the thesis is of personal importance; it is an identified goal that these students have set out to accomplish. Subsequent behaviors that help satisfy that goal are considered to be within the realm of identified regulation. Identified regulation is an important form of extrinsic motivation because it is the first type of extrinsic motivation that also includes self-regulated feelings of importance. To understand and accept the benefits of an activity as personally important the individual is making a conscious decision to care about the activity, which is an expression of autonomy (Deci & Ryan, 2002).

The fourth and final type of extrinsic motivation is called integrated regulation and involves a merging of different thoughts and urges to create one unified sense of self-regulated behavior that is characterized by harmony in one's thoughts and actions (Deci & Ryan, 1985). Social influences do not pressure integrated individuals into conforming or abiding because the way these individuals think, feel, and behave is congruent with the social values around them. They have a unified self-concept that has accepted those

social values as their own. For example, some graduate students may forgo going out to the bars with friends to stay in and work on their theses. These students identify themselves as graduate students and a part of their role-identity (as graduate students) is to finish their work before they go out with friends. In this case, these individuals have integrated the belief of good study habits into seamless development of a highly regulated self that does not experience any anxiety or pressure to go out with friends, but instead relies on personal values and consequences of actions to decide the best course of action (Ryan & Deci, 2002). Deci and Ryan stated that it is the freedom to choose without any external forces persuading and individual one way or another that makes the regulation integrated.

The Three Psychological Needs

SDT maintains that an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 2000b). SDT states that satisfaction of these basic needs fosters well-being, and that support for and satisfaction of each is necessary for a person's growth, integrity, and well-being. Past research has suggested that the main difference between intrinsic and extrinsic goals, and the reason that the pursuit and accomplishment of these different goals tend to have differentially related psychological health outcomes is the extent to which each is related to the basic psychological needs for autonomy, competence, and relatedness (Ryan, Sheldon, Kasser, & Deci, 1996). SDT states that greater satisfaction of competence, autonomy, and relatedness promotes more self-regulated types of extrinsic motivation and even intrinsic motivation (Ryan & Deci, 2002). The three psychological needs provide the foundation for identifying external

forces that will aid an individual on the road to more self-regulated behaviors, and identifying external forces that will impede the path (Deci & Ryan, 2002).

SDT focuses on facilitating self-regulation, mainly through satisfying the three basic psychological needs. So how does one promote self-regulation through SDT? Deci and his colleagues embarked on a study to determine what factors can promote the self-regulation of an inherently boring activity (Deci et al., 1994). Researchers believed that the extent to which individuals internalize and, more specifically, integrate a boring activity would determine how self-determined they would feel. They also believed that providing individuals with a meaningful rationale for the boring activity, acknowledgment of the participant's feelings, and conveying choice instead of control, would lead to higher levels of internalization and self-determination.

Participants were asked to do a boring (as determined by pilot testing) computerized dot recognition task and were given instructions on how to perform the task. After the instructions were given, participants received a rationale, an acknowledgment, a choice, a combination of the three, all three, or none of the three manipulations. When participants received a rationale for the activity, they were told that the task improves attention and concentration, and that becoming competent in the activity would have personal benefits. When acknowledged, participants were told that it was perfectly okay if they did not find the task interesting because the researcher also did not find the task to be much fun. This was to increase the individuals feeling of relatedness to the researcher and thus, the research itself. To manipulate the individual's choice in the experiment, researchers used different wording when giving instructions. Individuals in the control group heard words such as "must" and "have to," while

individuals in the more autonomous group heard phrases such as “if you are willing.” As expected, researchers found that providing a rationale, acknowledging feelings, and providing choice, were all effective in promoting more self-regulated types of motivation. Further, researchers found that providing participants with either two or all three of the manipulators fostered more integrated motivation, while only providing one or no manipulators tended to lead to introjected motivation (Deci et al., 1994). This study demonstrated that fulfilling any one of the psychological needs can promote a move towards more self-regulated types of motivation, but that individuals really need to have at least any of the two, but more likely all three needs, met to feel truly self-determined.

Katz and Assor (2007) attempted to determine whether or not when individuals do not have all three psychological needs met, having a choice actually could be demotivating. Katz and Assor used several studies to determine what methods would support productive choices in students in an academic setting. They also argued that when students were forced to make a choice in an environment that did not support autonomy, competence, or relatedness, the choice could lead to negative outcomes including frustration, alienation, and becoming extrinsically motivated. Research has shown that when children understood and were clear about the goals that were required in choosing between only a few choices, they had higher levels of positive affect and engagement as compared to children who had more choices to choose from (Assor, Kaplan, & Roth, 2002). That is to say, when choice is separated from other aspects of autonomy support, such as interest, values, volition, or goals, the act of choosing is not the major motivating property of choice. One cannot feel good about a choice when one does not know what to choose or why to choose it. It was also found that volition and an

internal locus of causality were better predictors of a sense of self-determination than was choice alone. Therefore, students who had only a small number of topics to choose from (e.g., a professor provides a list of three or four potential topics) would not necessarily be doomed to lower levels of autonomy, competence, and relatedness, compared to students who use a thesis topic they came up with themselves, or who choose their thesis topic from an infinite list of possibilities, as long as these students choose to accept a thesis project as their own (Reeve, Nix, and Hamm, 2003).

As with autonomy, competence can be negatively impacted by complex decisions. Several studies have found that when decisions are very complex, individuals resort to deferring decisions, choosing the default option, or choosing not to choose (e.g., Dhar, 1997; Iyenger, Huberman, & Jiang, 2004). When options become more complex, children, as well as adults, tend to respond by using less complex strategies and even resort to random selection. This is partly because the more complex a decision becomes, the less is known about all the attributes that go into the decision. As our perceived amount of competence related to the decision decreases, so does our motivation to put forth the effort to make the correct decision because we feel that the effort is not going to change the overall outcome from guessing. Beginning a thesis can be one of the most difficult and complex tasks a graduate student engages in because: (a) a thesis is a very large project with several components, and (b) it is likely the first project of such a large magnitude that he or she has done. Each of the three needs postulated by SDT, that is, relatedness, competence, and autonomy, will be discussed in detail in the following sections.

Relatedness

Because extrinsically motivated behaviors are not typically interesting, the primary reason people initially engage in them is that the behaviors are prompted, modeled, or valued by significant others to whom the actor feels attached or related (Deci & Ryan, 2000a). Therefore, relatedness, the need to feel belongingness and connectedness with others, is centrally important for self-regulation of behaviors. Ryan, Stiller, and Lynch (1994) found that children who were securely connected to their families and schoolteachers had more self-regulated types of motivation towards school. This suggests that while school may not be inherently important to a child, because his/her close social support group (i.e., family and teachers) find schooling important, so does the child.

In the current study, the thesis colloquium serves as a conductor to the realization that all graduate students are in a similar situation. The Western Kentucky University (WKU) I/O thesis colloquia are attended by students who are all embarking on the same thesis conquest and their I/O faculty. The colloquium provides a guide point and informative outlet for each student. In the colloquium, students learn exactly what other students are doing for their thesis and how far along they are with their project. It is not likely that students would otherwise sit down and go over, in detail, what they are working on. The colloquium enables students to inform other students and faculty what they are doing and on what they may need help. The colloquium also provides opportunities to get ideas and new ways of approaching a thesis as a whole, or a certain section, from others in the group. Most importantly, students realize that even though they're not writing about the same topic, they're all working towards the same goal. As

such, the thesis colloquium broadens the band of meaningful relationships that are formed, especially peer-to-peer.

Sheldon and Bettencourt (2002) explained the relationship between psychological needs and subjective well-being in the context of social groups. Humans have both self-oriented psychological needs, which are satisfied by autonomy, and socially-oriented psychological needs, which are fulfilled by relatedness. The researchers examined participants who socialized in two different types of groups. The first type of group was a formal group, defined as a group that had charters, officers, a defined mission, and regular meetings. Some examples of formal groups would be a Lions Club, Rotary Club, or a thesis colloquium. The second type of group was an informal group; characterized as a less well-defined group that was based on friendship, study arrangements, or casual hobbies. An example of an informal group would be having a group of friends that get together every so often to hang out.

The researchers hypothesized that there would be different kinds of experiences and satisfaction needed in each type of group. That is, individuals in formal groups may need to experience more relatedness than those in informal groups. They also hypothesized that not only would relatedness be a significant factor in participant well-being, but it also would be positively correlated with autonomy. Participants were asked to think about one formal group to which they belonged while filling out a survey that included a need-satisfaction scale based on the principles of SDT. If participants did not belong to a formal group, they were asked to think about an informal group to which they belonged. Overall, the researchers found that relatedness was positively correlated with both positive affect and commitment to one's social group regardless of the type of

group with which they identified. Researchers also found a positive correlation between relatedness and autonomy. That is, generally, as one need was more satisfied, so was the other. While no group differences were found with regards to relatedness, lower levels of individual autonomy were seen in formal groups. However, higher levels of group autonomy were found. The researchers suggested that individuals in formal groups are willing to make the trade of lower individual autonomy to gain the benefits of being in a more uniquely defined group (Sheldon & Bettencourt, 2002).

Relatedness has been found to be a key component of psychological well-being, and plays a large role in one's thesis, from interactions with one's thesis advisor and committee to interactions with study participants (Monsour & Corman, 1991).

Relatedness, however, is not the only aspect that effects psychological well-being (Ryan & Deci, 2000).

Competence

The relative internalization of extrinsically motivated activities is also a function of perceived competence. People are more likely to adopt activities when they feel efficacious with respect to those activities (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). This is not to say that people do not engage in activities they are not good at. People have a primal need to understand and conquer their environment, from cooking and driving a car to videogames and school (Deci & Ryan, 2002). How competent one feels about a situation can be manipulated, in part, by controlled or informational feedback, or even the wording of instructions/feedback (Deci & Ryan, 1985). Controlled feedback occurs when feedback is given in a pressure context. For example, if an experimenter said an individual had a certain amount of time to build a

design (e.g., using words like “must”) out of blocks and halfway through the task the experimenter gave the individual positive feedback, one would most likely experience a more externally-regulated form of motivation.

In contrast, informational feedback is simply feedback given in a relaxed environment. For example, if the same experimenter asked the same individual to try their best at building the same design, but did not put any time limit or constraints on the individual, then provided them with positive feedback halfway through the session one would likely see an increase in intrinsic motivation and a more self-determined form of regulation. Deci and Ryan stated that the difference was in how the individual perceived the experimenter. In a controlled feedback condition, the individual views the experimenter as pushing the individual to a goal that is important to the experimenter; conversely, in an informational feedback session, the individual believes the positive feedback is a reflection of their competence on the task, which promotes a more self-regulated form of extrinsic motivation.

Sheldon and Filak (2008) studied the effects that perceived competence had in a game-learning context. In the game context, higher levels of competence involved feeling efficient, effective, and even masterful in one’s behavior, rather than incompetent or ineffective. Participants learned how to play a word game, in which one tries to make as many words as possible out of a large set of arranged letters. Individuals were split into two different groups. To manipulate participant’s perceived levels of competence for the game, the competence support group was told that the game was very challenging but ended by saying, “Just do the best you can, and you will improve quickly. I have confidence in you!” The non-competent group was told that the game was very

challenging and, “beginners, like you, usually don’t find very many words, but do your best.” Researchers believed that competence would be related to at least some of the dependent measures, which were positive affect, negative affect, intrinsic motivation, willingness to recommend the game to others, and objective performance. Beyond what the researchers hypothesized, competence was found to have a significant correlation with all five dependent measures. Competence was positively correlated with feeling intrinsically motivated, positive affect, recommending the game to others, and their objective performance (i.e., when participants felt more competent about their abilities to play the game, they actually found more words than those who did not feel competent). Competence was negatively correlated with negative affectivity.

The current study is concerned with how a thesis colloquium might promote competence. To do this a quick overview of the thesis process is first in order. For individuals to successfully complete a thesis there are two important milestones that must be accomplished. First is the proposal. Before students can collect data they must go before their thesis committee members with a draft of their thesis that includes all the steps to be taken in collecting data. Students are expected to put together a presentation that outlines their thesis as a whole, how they are planning to collect data, how they are going to use said data, and what that data will hopefully tell them. After approval from the members and the Human Subjects Research Board (HSRB), students collect their data, write up their findings, and are then ready for milestone two, the defense. Here, students present their thesis in its entirety; what was done, how it was done, and why it was done. At both the proposal and defense, students can be expected to be anything from politely queried about certain aspects of their thesis to being questioned in-depth.

The process can be unsettling, to say the least. The point being, students have to become very competent on their topic. However, when programs provide thesis colloquia, the first test of competency becomes the thesis colloquium, which is a room full of people who have their full attention focused solely on the thesis presenter.

The thesis colloquium provides a solid first step in preparing students to talk about their thesis in an intellectual and engaging way. The colloquium is a way of encouraging students to start on their literature review and to start writing their thesis. There is no set deadline for one's proposal and defense; those occur only after the student has completed all previous steps necessary to propose or defend. The colloquium is a set date when each student is going to have to get up and talk about his or her thesis, no matter how much progress they have made. Students will need to prepare an effective presentation on their thesis topic. Furthermore, unlike the proposal and defense, in the thesis colloquium, the student is in a room full of people who have, or are about to, do a very similar presentation. The atmosphere is more relaxed than the proposal or defense and, as such, encourages giving and receiving advice and ideas, which is a good way to gain competence.

Competency deals with how much an individual believes they are able to achieve a goal that is in front of them (Van den Broeck et al., 2008). That is, the more an individual believes they are able to accomplish a goal, the more intrinsically motivated the individual will be in terms of working towards his/her goal (Sheldon & Filak, 2008). Also, the majority of professors and students in the colloquium do not have a personal investment in each individual thesis; therefore, the feedback provided in colloquium is informational feedback. While competence plays a large role in completing a thesis,

perceptions of competency can be facilitated through, or hindered by autonomy (Deci et al., 2001).

Autonomy

Autonomy is an extremely important construct in SDT. Autonomy is the process of self-regulation. Those who are autonomous organize their behavioral regulation by taking reflective interest in possibilities and choices (Ryan & Deci, 2006). There are three important characteristics to autonomy: choice, volition, and locus of causality (Deci & Ryan, 1985). Choice is the act of choosing to do something. In SDT, however, choice only happens when the individual is free to make the choice. For example, if someone throws a rubber ball at a child's head in gym class, the child may instinctively duck out of the way. If the child did not have time to think about whether or not they really wanted to duck out of the way of the ball, ducking was not a choice, rather it was an internally controlled event that the child had no say in. Volition is the desire to do something of one's own free will. Volition is not so much the choice, but the integration of oneself with the decision being made, so that the decision is not pressured through outside forces (Vandereycken & Vaansteenkiste, 2009). Locus of causality is the perception of whether an action was done because of self-regulated behaviors, or because of external, environmental causes (Deci & Ryan, 2002). For example, if students work on math problems in class because their teacher told them they had to, these students would perceive the locus of causality for doing math problems as external (i.e., the teacher is making me). If the same students worked on the same math problems because they decided that they wanted to work on those problems, these students would feel like they

had an internal locus of causality. When individuals have choice, volition, and an internal locus of causality, they are more likely to experience autonomy.

People experience autonomy when they have freedom of choice and are free from excessive control (Deci & Ryan, 1985). Deci and Ryan, however, stated that autonomy is not the same as independence. A student can be autonomous and be dependent as long as the importance of the project, project goals, and project values are the same for the individual and the organization (e.g., the class, program, or school) and the organization gives the student the freedom to determine how to complete the project. By allowing the student to work on what they feel is important, to make his/her own decisions, and providing him/her with freedom from being overly-monitored by advisors, it creates an autonomous environment for that student. This essentially describes the process for conducting a thesis. The student and advising faculty member jointly choose a topic, and, while the advising faculty member can provide guidance and feedback, it is up to the student to write the thesis. It is important to note that autonomy cannot be reached without competence or relatedness. The student has to believe in the goals and values that the organization has (relatedness) and they have to feel capable enough to make their own decisions (competence). This also explains, in part, why relatedness and autonomy were positively correlated in the social groups study by Sheldon and Bettencourt (2008). Providing all three needs, competence, relatedness, and autonomy, is the best way to promote a more self-regulated sense of one's thesis.

Pelletier, Fortier, Vallerand, & Briere (2001) conducted a study on the influences of perceived autonomy that looked at the influence of athletes' perceptions of coaches' interpersonal behaviors (autonomy support vs. control) on the different forms of

regulation (i.e., intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation) for the practice of a competitive sport, and the combined impact of the perception of coaches' interpersonal behaviors and the distinct types of regulation on persistence in the practice of that sport at the end of two competitive swimming seasons. Participants rated the extent to which they felt their coach behaved in an autonomy-supportive or controlling way. The results showed that swimmers who were autonomy-supported were more likely to have intrinsically motivated types of self-regulated behavior and had high levels of persistence throughout both seasons. Researchers also found that an individual's level of autonomy and persistence in the program (as shown by not dropping out) decreased as the swimmers viewed their coaches' regulatory style to be more and more controlling.

Pelletier et al. (2001) focused on how levels of autonomy were affected in the real world; Reeve et al. (2002) attempted to reliably manipulate participant's feelings of autonomy in a laboratory setting. The researchers set up a learning conversational Chinese video that was not inherently interesting. Researchers wanted to manipulate the uninteresting task by providing a believable rationale to why the participants, who were all elementary education majors, should pay attention to the video. Participants were split into a control group that received no rationale for watching the video, an external regulation group that was told there would be a test after the video, an introjected regulation group that was told they needed to pay attention because that is what pre-service teachers ought to do, and an identified regulation group that was told that approximately 5% of students in the schools in the surrounding area were Chinese and that it was an opportunity to cultivate a useful skill. The study measured participant's

feelings of perceived importance, effort, and perceived self-determination. Researchers hypothesized that providing an autonomy-supportive rationale for watching the video would facilitate higher levels of identification experience and, therefore, greater subsequent effort. As hypothesized, the researchers found that only the identified regulation group significantly facilitated the identification experience. The identified regulation group also exerted a significantly higher level of effort in attempting to learn the Chinese phrases as compared to all other groups.

A great deal of research supports the importance of autonomy (Carver & Scheier, 2001; Deci & Ryan, 2003; Deci & Ryan, 2006; Friedman, 2003; Ryan & Deci, 2004). However, are humans able to experience autonomy when they are engaging in isolated behaviors? Chu and Koestner (2008) recently attempted to determine whether or not engaging in solitary behaviors could, in fact, facilitate autonomy and well-being. Being engaged in solitary behaviors is usually perceived as a reflection of social isolation and thought to be associated with loneliness (Larson, 1990). However, past research has suggested that the capacity and willingness to engage in solitary activities may actually reflect feelings of secure attachments or that such behavior simply fits one's interpersonal style (Leary, Herbst, & McCrary, 2003). Researchers hypothesized that solitary behavior, when based on autonomous rather than controlled motivation, would be associated with lower levels of loneliness and higher levels of well-being. As expected, researchers found that solitary behavior was associated with loneliness and lower levels of well-being when participants felt they were being forced into solitary behaviors. When participants felt autonomous and opted for solitary behaviors, there was no association with loneliness or negative well-being. The researchers pointed out that

relative autonomy is important regardless of participants' decision to act or not to act, as long as they feel it is their decision to make.

Leary et al. (2003) provided an essential point related to writing a thesis. While previous studies have encouraged the use of a dissertation/thesis partner (e.g., Monsour & Corman, 1991), the vast majority of students spend most of their time working on their thesis alone. The only thing worse than doing something you really don't want to do, is doing it by yourself (Germeroth, 1991). It is not to be expected that after presenting at a colloquium that students would feel completely intrinsically motivated towards their thesis. However, the colloquium may move students from being almost exclusively externally motivated (I am doing a thesis because the program dictates I do it) to an introjected or identified form of regulation. Thesis colloquium by its nature will instill a sense of introjected regulation in presenters because introjected regulation deals heavily with one's ego. With introjected regulation, instead of gaining something positive, the individual is trying to avoid something negative. People will complete tasks or work hard on a project so that others don't think they are failures or because they want praise (i.e., protecting their ego), their ego-state is contingent on external factors (i.e., others have to give the praise or punishment in the first place; Ryan & Deci, 2000).

Identified Regulation reflects a conscious valuing of a behavioral goal or regulation such that the action is accepted or owned as personally important, and is relatively intrinsically motivated (Deci & Ryan, 1985). While one would hope that eventually every student would realize that the skills cultivated and honed through writing a thesis will be of value to them in the real world, there may come a point, if students wait long enough to start or finish their thesis, that all they want to do is get it

done and move on. It is with this mind set, which is completely externally regulated, that writing a thesis becomes wretched, and may lead to permanent ABT status (Germeroth, 1991). Promoting a larger number of thesis oriented relationships, a relaxed environment for the first public discussion on each student's thesis, and an early start, a thesis colloquium provides some essential tools for ensuring students complete school in a timely fashion with degree in hand.

SDT provides an opportunity to determine if thesis colloquia facilitate a shift in mindset about the importance of one's thesis and if important relationships are formed through thesis colloquia. Not only does SDT stress the importance of internal verses external regulation, but it also emphasizes the importance of the three basic psychological needs, competence, relatedness, and autonomy to aid the internalization of inherently externally regulated activities like writing ones thesis (Deci et al., 1991).

The current study

Monsour and Corman (1991) stated that individuals who are writing their thesis or dissertation need support beyond that provided by their advisors and committee members, and that, due to the complexity of the thesis process, which is outside the expertise of most students' family and friends, finding proper support may be difficult. Kluever (1997) found that writing a thesis is new territory for most students and that the student's greatest needs included adding more structure to the thesis project and making courses or seminars on dissertation/thesis completion available to students. A thesis colloquium could help to meet these needs. Western Kentucky University (WKU) second year I/O graduate students are required to present their project at thesis colloquia held during the fall semester. Every I/O graduate student (i.e., first and second year students), as well as

the I/O faculty, are required to attend. Second year students present their thesis topic, background information on their topic, and progress made thus far on their thesis. This provides the opportunity to see where each student is relative to other students in his or her program. Students also are encouraged to provide feedback and suggestions to each presenter, as well as share information and knowledge on one another's projects. Both first and second year I/O graduate students attend thesis colloquia. Although first year students do not present in the colloquia, they observe each presentation and are encouraged to give feedback to the presenters. This experience provides the first year students with an opportunity to see the format of the colloquium presentations that they themselves will be required to make the following year.

The thesis colloquium acts as a motivator for students to get an early start as suggested by one of Hanson's (1992) recommendations for successful completion:

“Students are encouraged to identify their research interests as early as possible in the completion of their coursework. By doing so, the six to nine credit hours of research required for degree completion can be devoted to writing the [thesis or] dissertation proposal and completing preliminary research. Therefore, when all coursework is completed, these students will have already finished a substantial part of the [thesis or] dissertation process.”

The current study tested three hypotheses.

Hypothesis 1: Individuals who participated in a thesis colloquium in their second year of an I/O graduate school will complete their thesis sooner than those who did not participate in a thesis colloquium.

Hypothesis 2: Students who participated in a thesis colloquium in their second year of I/O graduate school will report higher level of intrinsically motivated forms of self-regulation toward their thesis compared to students who did not participate in a thesis colloquium.

Hypothesis 3: Students who participated in a thesis colloquium in their second year of an I/O graduate program will report higher levels of the three basic psychological needs, autonomy, competence, and relatedness as compared to students who did not participate in a thesis colloquium.

Method

Participants

In order to increase the number of participants, the sample included former I/O graduate students from four universities. The three other universities were included in the sample because of the similarity of their I/O program (i.e., full time, in-residence program with a thesis requirement or thesis option) to the program at Western Kentucky University (WKU). Former I/O students from WKU ($n = 63$, 67%), California State University at San Bernardino (CSUSB; $n = 15$, 16%), the University of West Florida (UWF; $n = 5$; 5.3%), Indiana University-Purdue University Indianapolis (IUPUI; $n = 10$, 10.6%), and one individual who did not identify his/her school affiliation (1.1%) were sent an email requesting them to complete a survey that was posted on SurveyMonkey.com. The breakdown of students who completed their thesis on time or not by school and whether they presented at a thesis colloquium is presented in Table 1.

The original sample consisted of 99 participants. Of the 99 participants, 5 participants were removed because they answered 8 or fewer of the 77 items on the survey, leaving 94 valid participants. The sample consisted of 58 (61.7%) females, 34 (36.2%) males, and 2 individuals who did not identify their gender (2.1%). The participants had a mean age of 32.2 years ($SD = 7.05$; range = 24 to 55). The sample was comprised of 89.4% Caucasians, 4.3% Asians, 2.1% African Americans, 1.1% Hispanic, 1.1% Bi-Racial, and 1.1% was identified as other. Participants reported graduation dates ranging from 1983 to 2009 (Mdn = 2004).

Table 1
On-time versus late completion rates by school and whether one presented at a thesis colloquium

School	Presented at a thesis colloquium	Completed thesis on time?		Total
		No	Yes	
CSUSB	No	8	0	8
	Yes	4	2	6
	Total	12	2	14
IUPUI	No	4	2	6
	Yes	3	1	4
	Total	7	3	10
UWF	No	2	0	2
	Yes	0	3	3
	Total	2	3	5
WKU	No	11	12	23
	Yes	18	22	40
	Total	29	34	63
Other	No	0	0	0
	Yes	0	1	1
	Total	0	1	1

Note. One CSUSB individual did not indicate whether he/she graduated on time, and was therefore left out of the analyses

Design

This study used a between subjects design. The independent variable was whether participants reported that they presented at a thesis colloquium as part of their graduate education. The dependent variables were whether they successfully defended their thesis on time (i.e., by the time they completed their coursework), their type of regulated behavior (i.e., amotivated, externally regulated, or intrinsically motivated), and scores on the three basic needs.

Measures

Demographics. Participants completed a demographics section on the survey. This section included information about each participant's age, gender, ethnicity, where they completed their master's thesis in I/O psychology, date they entered the program, when they successfully defended their thesis, whether or not they participated in a thesis colloquium, self-perceived skill development due to completing their thesis, and questions pertaining to the job they currently hold (see Appendix A).

Motivation. Motivation was assessed via an instrument adapted from the Academic Motivation Scale (AMS; Vallarand et al., 1992; Derryberry & Wininger, 2008; see Appendix B). The instrument used in the current study replaced the word "college" with the word "thesis" and changed the phrasing from present tense to past tense. The measure consisted of 36 items that assessed the reasons an individual was motivated to work on and complete his/her thesis. Participants rated each item on a 1 (Does not correspond at all) to 5 (Corresponds exactly) graphic rating scale. It should be noted that the original scale used five anchors on a 7-point scale. For the current study, however, the researchers determined that using a 5-point scale (using all of the original anchors) with each point anchored would be more appropriate for the online format of the questionnaire. An example of an item from the adapted AMS is, "In order to obtain a more prestigious job later on." There are four items that pertain to each of seven types of regulation: amotivation, external, introjected, identified, intrinsic to experience stimulation, intrinsic toward accomplishment, and intrinsic to know, and eight questions that pertain to integrated regulation. The responses for each item for each type of regulation were summed to create an index score for each type of regulation. Derryberry

and Wininger found the AMS had high Alphas for the majority of indices: Amotivation (.84), External Regulation (.82), Introjected Regulation (.85), Identified Regulation (.61), Integrated Regulation (.73), Intrinsic – To Know (.87), Intrinsic – Toward Accomplishment (.87), Intrinsic – To Experience Stimulation (.87).

Basic Psychological Needs. The Basic Psychological Needs Scale (BPNS; Gagné, 2003; see Appendix C) was adapted to relate to one's work on his or her thesis. The BPNS consisted of 21 items that measured the extent to which a person felt autonomy, competence, and relatedness with regard to completing his or her thesis. Participants rated each item on a 1 (Strongly disagree) to 5 (Strongly agree) graphic rating scale. The original scale was a 7-point scale with three anchors; however, to keep the response scales in the study uniform and easily understood in an online format, the scale was adapted to a 5-point scale with an anchor on each point. An example of an autonomy item is "I felt like I was free to decide for myself how to complete my thesis." An example of a competence item is "People I know tell me I am doing a good job on my thesis." An example of a relatedness item is "I really like the people I interact with while working on my thesis." The alpha coefficients for the original BPNS are .69 for autonomy (7 items), .71 for competence (6 items), and .86 for relatedness (8 items).

Procedure

After receiving HSRB approval (Appendix D), participants were recruited by email. The director or immediate past director of the participating I/O psychology programs sent out an email to his/her alumni. Each email contained a brief explanation of the current study and a link to the survey, which was posted on [surveymonkey.com](https://www.surveymonkey.com) (see Appendix E). Participants were informed about what they could expect on the

survey (see Appendix F); they provided their assent by continuing to the survey page.

Participants then proceeded to complete the actual survey, which included the demographics section, the AMS, and the BPNS. The estimated time of completion was about ten minutes.

Results

Preliminary Analysis

Scores from the AMS were summed to create index scores for each type of regulation along with composite scores for Intrinsic and Extrinsic Motivation. Composite indices were computed for Intrinsic Motivation and Extrinsic Motivation. Descriptive statistics and coefficient alpha for each index are reported in Table 2. A comparison of internal consistency reliabilities from Derryberry and Wininger (2008) and those found in the current study indicate the adaptations made for the current study did not decrease scale reliabilities.

Table 2

Sample size and reliabilities for each AMS index and composite index

Index	<i>n</i>	Alpha	<i>M</i>	<i>SD</i>	Observed Range ^a
Intrinsic – To Know	93	.860	11.37	3.56	4-20
Intrinsic – Toward Accomplishment	94	.864	12.41	3.84	4-19
Intrinsic – To Experience Stimulation	93	.874	8.08	3.32	4-18
Integrated Regulation	92	.893	19.89	7.26	8-40
Identified Regulation	92	.761	10.79	3.52	4-20
Introjected Regulation	92	.853	12.61	3.85	4-20
External Regulation	94	.859	9.59	3.72	4-16
Amotivation	93	.826	5.35	2.43	4-14
Intrinsic Motivation Composite	93	.935	10.6	3.1	4-18.7
Extrinsic Motivation Composite	88	.914	9.78	2.42	4.9-15

^a The potential range is 4-20 for all indices except Integrated Regulation, for which the potential range is 8-40.

Scores from the BPNS were summed to create index scores for each basic psychological need. Descriptive statistics and coefficient alphas are provided for each

psychological need in Table 3. A comparison of the internal consistency reliabilities reported in Gagne (2003) and these found in the current study indicate that the adaptations made to the BPNS did not decrease scale reliability.

Table 3
Sample size and reliabilities for each BPNS index

Index	<i>n</i>	Alpha	M	SD	Actual Range	Potential Range
Competence	92	.717	23.26	3.52	14-30	6-30
Autonomy	91	.782	25.16	4.26	15-35	7-35
Relatedness	92	.828	31.25	4.75	17-40	8-40

An examination of the independent variable (whether or not an individual presented at a thesis colloquium) revealed no significant differences between males and females, $\chi^2(1, N = 92) = 1.28, p = .258$. An examination between ethnicity and the independent variable revealed no significant differences between any ethnic group, $\chi^2(5, N = 93) = 6.81, p = .236$. Because there were no significant differences found, gender and ethnicity were collapsed for the remaining analyses.

Analyses

To evaluate Hypothesis 1, a one-tailed Z-test for independent samples was conducted to determine if participating in a thesis colloquium positively affected the on-time completion rate of I/O graduate students. The following formula was used to calculate Z, where p is the proportion of participants who graduated on time across all participants, p_1 is the proportion for participants who presented at a thesis colloquium and p_2 is the proportion of participants who did not present at a thesis colloquium.

$$Z_{obs} = \frac{p_1 - p_2}{\sqrt{p(1-p)(1/n_1 + 1/n_2)}}$$

The analysis revealed that individuals who presented at a thesis colloquium ($n = 54$) had a significantly higher on-time graduation rate (29 or 53.7%) than did students who did not present at a thesis colloquium ($n = 39$; 14 or 35.9% on-time), $z = 1.699$, $p < .05$.

To evaluate Hypothesis 2, three univariate Analyses of Variance (ANOVA) were conducted to assess whether the forms of regulated motivation differed as a function of presenting or not presenting at a thesis colloquium. The eight levels of regulation were collapsed into three categories. The first category was intrinsic regulation, which was comprised of intrinsic motivation to know, intrinsic motivation toward accomplishment, and intrinsic motivation to experience stimuli. The second category was external regulation, which included external regulation, introjected regulation, identified regulation, and integrated regulation. The third category was amotivation; this category included only the amotivated index. The first analysis revealed that individuals who presented at a thesis colloquium reported experiencing significantly higher levels of intrinsic motivation with regard to their thesis ($M = 11.4$, $SD = 2.78$) than individuals who did not attend a thesis colloquium ($M = 9.48$, $SD = 3.24$), $F(1, 90) = 9.12$, $p = .003$. The second analysis revealed that participants who indicated that they presented at a thesis colloquium also reported feeling significantly higher levels of extrinsic motivation ($M = 10.35$, $SD = 2.33$) than did non-thesis colloquium participants ($M = 9.01$, $SD = 2.34$), $F(1, 90) = 7.25$, $p = .008$. The third analysis indicated that individuals who presented at a thesis colloquium reported a significantly lower level of feelings of amotivation ($M = 4.88$, $SD = 1.9$) than did the non-thesis colloquium participants ($M = 6.11$, $SD = 2.96$), $F(1, 90) = 5.68$, $p = .019$.

To evaluate Hypothesis 3, a one-tailed independent samples t-test was conducted for each of the three basic psychological needs indices to determine if participants who presented at a thesis colloquium differed from those who did not on each of the needs. Although neither autonomy ($t(89) = 1.417, p = .08$) nor competence, ($t(90) = 1.376, p = .086$) were found to differ based on presenting a thesis colloquium, levels of relatedness were significantly higher for participants who presented at a thesis colloquium ($M = 32.6; SD = 4.4$) than for participants who did not present at a thesis colloquium ($M = 29.6; SD = 4.7$), $t(90) = 3.0, p < .01$.

Discussion

The current study was conducted to assess the effectiveness of thesis colloquia in motivating graduate students to complete their thesis on time, and to extend the research on SDT to academic thesis colloquia. It was expected that master's level I/O students who presented at a thesis colloquium during their second year of graduate school would be more likely to graduate on time compared to students who did not present at a thesis colloquium. It also was expected that individuals who presented at a thesis colloquium would have more intrinsic self-regulation and higher levels of each of the three basic psychological needs (autonomy, competence, and relatedness) than those who did not present.

The first hypothesis stated that individuals who participated in a thesis colloquium in their second year of an I/O graduate school would complete their thesis sooner than those who did not participate in a thesis colloquium. Results supported this hypothesis, as individuals who presented at a thesis colloquium were significantly more likely to graduate on time compared to students who did not present at a thesis colloquium. To our knowledge, this is the first study to examine and find the significant positive effect that thesis colloquia have on graduate student thesis completion rates.

The second hypothesis stated that I/O graduate students who participated in a thesis colloquium in their second year of graduate school would report more intrinsically motivated self-regulated behavior toward their thesis compared to students who did not participate in a thesis colloquium. This hypothesis was supported as participants who presented at a thesis colloquium reported experiencing higher levels of intrinsic motivation than those who did not present. Those who participated in a thesis

colloquium likewise reported higher levels of extrinsic motivation (i.e., integrated, identified, introjected, and external), and reported experiencing lower levels of amotivation compared to participants who did not present at a colloquium. This finding can be interpreted as consistent with SDT theory. Specifically, getting students started earlier, and in a more relaxed, supportive environment can promote the internalization of writing a thesis (Deci & Ryan, 1985).

The third hypothesis stated that I/O students who participated in a thesis colloquium in their second year of a graduate program would report higher levels of the three basic psychological needs, autonomy, competence, and relatedness, as compared to students who did not participate in a thesis colloquium. Results did not support the hypothesis for either autonomy or competence. The results, however, did support the hypothesis for relatedness. That is, individuals who presented at a thesis colloquium reported that they had closer relationships with the people with whom they worked on their thesis (e.g., thesis chair, other graduate students) compared to individuals who did not present at a thesis colloquium. It is not surprising that relatedness increases when individuals presented at a thesis colloquium. Instead of working on one's thesis in relative isolation with his/her thesis chair and two other committee members, the individual starts early in the process by talking about his/her thesis in front of professors and graduate students. As such, more people are involved that may serve as potential resources for the thesis, whether for advice on the next step or just someone to talk to about the troubles and triumphs of the thesis process. This finding also is consistent with the postulate that people are more likely to work toward goals that are important to others that they care about (Deci & Ryan, 2000a). The more graduate students care about their

thesis chair, thesis committee, and anyone else who is helping with their thesis, and the more graduate students feels that all of those people care about them, the more likely they are to care about writing their thesis.

Autonomy and competence were not found to be affected by thesis colloquia. Autonomy is supported by working with independence or freedom from unwanted pressures. The amount of time that one puts into a thesis colloquium is relatively short compared to the amount of time it takes for an individual to complete a thesis. Also, the presentation itself is not necessarily supportive of autonomy because the individual has no control over what audience members will ask him/her or how many questions will be asked. The role of the audience members may also explain why competence was not affected by a thesis colloquium. Challenges to one's thesis by audience members may have led to reductions in feelings of competence.

There are limitations to the current study. The first limitation of the current study is non-response bias. It is possible that the individuals who chose not to respond to the survey differed in some systematic way from individuals who chose to respond to the survey. The survey may be biased toward the reports of responders and may not accurately represent the target population. The sample likewise did not include individuals who did not complete their thesis.

Another limitation is that the sampling pool did not include all I/O psychology alumni from each school. Not all alumni were contacted as some email addresses may have been lost or not recorded, and several emails were sent back because they were no longer in use. This may have skewed the representativeness of the actual sample (e.g., students who took the time to keep their information up to date may include a

disproportionate number of students that were highly motivated while in graduate school).

A related limitation of the study is the use of self-report data. Self-report measures assume that participants will answer items honestly. However, it is possible that participants were dishonest in their answers, misread questions, or did not understand questions.

There are several limitations inherent to using a quasi-experimental design. One such limitation is history; there may have been systematic differences before WKU required students to present at a thesis colloquium in 1999 and after students were required to present at a thesis colloquium. Requiring a thesis colloquium likely was one of many efforts by WKU faculty to increase the on-time graduation rate of I/O graduate students. There also were changes in faculty members over the years at WKU. New faculty members may put more emphasis on their thesis advisees completing their theses on time compared to past faculty members.

A related limitation is that of program differences. Although the other three programs (CSUSB, UWF, IUPUI) were chosen for inclusion in the study because of their similarity to the program at WKU on key characteristics, there likely are systematic differences among the programs that could affect thesis completion rates. It may be that some schools put more emphasis on completing theses than others. Cohorts of classmates may have an effect on thesis completion (e.g., classmates that support thesis completion compared to students who impede thesis completion). Both changes over time at WKU and differences between programs are a function of selection. Because a true experiment with random assignment was not feasible, a quasi-experiment with non-

equivalent groups was conducted. Essentially, different groups received different treatments as opposed to equivalent groups being randomly assigned as in a true experiment.

A final limitation is that of requiring participants to respond retrospectively to events that happened years earlier; that is, relying on retrospective memory. Previous research found that individuals do not simply experience an event, store that event into memory, and then objectively recall that event later. Rather, people experience an event, store distorted inferences made from the event (depending on feelings, mood, incomplete knowledge of the event, etc.), and recall their perception of the event later (Gibbons, Skowronski, Thompson, Vogl, & Walker, 2003). Individuals who graduated 5, 10, or 15 years ago may not have as accurate a memory of their thesis experience as individuals who graduated 1 or 2 years ago. Individuals' retrospective memory may also be affected by what they have done with their I/O degree. For example, if one former graduate student works for an organization in which she does a lot of report writing, she may feel that the skills she learned while writing her thesis are much more important today than another student who initially had the same feelings towards his thesis as the aforementioned female, but, because he has been a stay-at-home father for the past 10 years, he no longer see the value he once did in writing his thesis.

In conclusion, the current study has indicated the effectiveness of thesis colloquia as a means to increase on-time thesis completion rates. The current study found both behavioral and psychological benefits of presenting at a thesis colloquium. Not only do colloquium participants complete their thesis sooner, but also their reported level of motivation toward their thesis is more positive than those who do not present at thesis

colloquia. This research demonstrates the benefits of thesis colloquia for graduate students; as such, graduate program directors should consider including a thesis colloquium in their program's academic schedule.

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Appendix A
Demographics

Demographics

Directions: Please answer the following questions in an honest manner. **DO NOT** include your name or any other identifying information.

1. Age: _____
2. Gender: **Male** **Female**
3. Ethnicity: **Caucasian** **African American** **Hispanic** **Asian** **Bi-Racial** **Other**
4. At what school did you complete your master's thesis in I/O Psychology?
Western Kentucky University (WKU)
California State University at San Bernardino (CSUSB)
University of Western Florida (UWF)
Indiana University-Purdue University Indianapolis (IUPUI)
5. When did you successfully defend your master's thesis?
Month_____ **Year**_____
6. Did you complete your master's thesis on time? (i.e., did you finish your thesis before your coursework was finished?)
Yes **No**
7. Did you present your thesis proposal/idea at a colloquium while you were in graduate school?
Yes **No**
- a. If yes to question 6, how much do you agree that the thesis colloquium motivated you to start your thesis early?
strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**
- b. If yes to question 6, how much do you agree that the thesis colloquium motivated you to work harder on your thesis?
strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**
- c. If yes to question 6, how much time did you spend thinking about thesis colloquium? _____
8. Thinking back to when you were still in your masters program, how much do you agree that completing your thesis was worthwhile accomplishment (more than just finishing it)?
strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**
9. How much time did you spend thinking about finishing your thesis on time? _____
10. In regards to working on your thesis, how much do you agree that you...

a. Developed project management skills?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

b. Developed data management skills?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

c. Developed data analysis skills?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

d. Improved your Interpretive writing skills?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

e. Improved your technical writing skills?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

11. Now that you are in the workforce, was completing your thesis a worthwhile accomplishment (more than just finishing it)?

strongly disagree **disagree** **disagree somewhat** **neutral** **agree somewhat** **agree** **strongly agree**

12. Are you currently employed in a field related to I/O or Experimental Psychology?

Yes **No**

13. Do you manage projects in your job? **Yes** **No**

Appendix B

Academic Motivation Scale (AMS)

Academic Motivation Scale

Using the scale below, indicate to what extent each of the following items corresponded to one of the reasons completing your thesis.

	Did not Correspond at all 1	Corresponded a little 2	Corresponded moderately 3	Corresponded a lot 4	Corresponded exactly 5
WHY DID YOU WORK ON YOUR THESIS?					
1. Because without completing my thesis I did not think I would have found a high-paying job later on.	1	2	3	4	5
2. Because I experienced pleasure and satisfaction while learning new things.	1	2	3	4	5
3. Because I thought that working on my thesis would help me better prepare for the career I had chosen.	1	2	3	4	5
4. For the intense feelings I experienced when I was communicating my own ideas to others.	1	2	3	4	5
5. Honestly, I don't know; I really felt that I was wasting my time on my thesis.	1	2	3	4	5
6. For the pleasure I experienced while surpassing myself in my studies.	1	2	3	4	5
7. To prove to myself that I was capable of completing my thesis.	1	2	3	4	5
8. In order to obtain a more prestigious job later on.	1	2	3	4	5
9. For the pleasure I experienced when I discovered new things never seen before.	1	2	3	4	5
10. Because eventually it would enable me to enter the job market in a field that I liked.	1	2	3	4	5
11. For the pleasure that I experienced when I read interesting authors.	1	2	3	4	5

Did not Correspond at all 1	Corresponded a little 2	Corresponded moderately 3	Corresponded a lot 4	Corresponded exactly 5			
12. I once had good reasons for completing on my thesis; however, by the end, I wonder whether I should have continued			1	2	3	4	5
13. For the pleasure that I experienced while I was surpassing myself in one of my personal accomplishments.			1	2	3	4	5
14. Because of the fact that when I succeeded on My thesis I felt important.			1	2	3	4	5
15. Because I wanted to have "the good life" later on.			1	2	3	4	5
16. For the pleasure that I experienced in broadening my knowledge about subjects which appealed to me.	1	2	3	4	5		
17. Because my thesis helped me make a better choice regarding my career orientation.			1	2	3	4	5
18. For the pleasure that I experienced when I felt completely absorbed by what certain authors had written.			1	2	3	4	5
19. I can't see why I completed my thesis and frankly, I couldn't have cared less.			1	2	3	4	5
20. For the satisfaction I felt when I was in the process of accomplishing difficult academic activities.			1	2	3	4	5
21. To show myself that I was an intelligent person.	1	2	3	4	5		
22. In order to have a better salary later on.			1	2	3	4	5
23. Because my thesis allowed me to continue to learn about many things that interested me.			1	2	3	4	5
24. Because I believed that completing my thesis would improve my competence as a worker.			1	2	3	4	5

	Did not Correspond at all 1	Corresponded a little 2	Corresponded moderately 3	Corresponded a lot 4	Corresponded exactly 5
25. For the "high" feeling that I experienced while reading about various interesting subjects.	1	2	3	4	5
26. I don't know; I couldn't understand what I was doing while completing my thesis.	1	2	3	4	5
27. Because working on my thesis allowed me to experience a personal satisfaction in my quest for excellence as a graduate student.	1	2	3	4	5
28. Because I wanted to show myself that I could succeed on my thesis.	1	2	3	4	5
29. Because it was consistent with what I valued.	1	2	3	4	5
30. When I described myself to others, I usually included the fact that I completed my thesis.	1	2	3	4	5
31. Because completing my thesis was an important aspect of how I perceived myself.	1	2	3	4	5
32. Others saw me as someone who had completed His/her thesis.	1	2	3	4	5
33. Because I valued the way completing my thesis allowed me to make changes in my life.	1	2	3	4	5
34. I would have felt a real loss if I were forced to give up on completing my thesis.	1	2	3	4	5
35. Because I felt the changes that took place through completing my thesis became a part of me.	1	2	3	4	5
36. Completing my thesis was a big part of who I was.	1	2	3	4	5

Appendix C

Modified Basic Psychological Needs Scale (BPNS)

Modified Basic Psychological Needs Scale

Directions: Please read each of the following items carefully, thinking about how it relates to your thesis experience, and then indicate how true it was for you. Use the following scale to respond:

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

1. I felt like I was free to decide for myself how to complete my thesis.

1 2 3 4 5

2. I really liked the people I interacted with while working on my thesis.

1 2 3 4 5

3. Often, I did not feel very competent while working on my thesis.

1 2 3 4 5

4. I felt pressured to complete my thesis.

1 2 3 4 5

5. People I know/knew told me I was doing a good job on my thesis.

1 2 3 4 5

6. I got along with people I came into contact with for my thesis.

1 2 3 4 5

7. I pretty much worked by myself on my thesis and did not have a lot of outside help.

1 2 3 4 5

8. I generally felt free to express my ideas and opinions for my thesis.

1 2 3 4 5

9. I considered the people I regularly interacted with on my thesis to be my friends.

1 2 3 4 5

10. I was able to learn interesting new skills while working on my thesis.

1 2 3 4 5

11. In regards to my thesis, I frequently had to do what I was told.

1 2 3 4 5

12. People I worked with on my thesis cared about me.
- 1 2 3 4 5
13. Most days I felt a sense of accomplishment from working on my thesis.
- 1 2 3 4 5
14. People I interacted with on my thesis tended to take my feelings into consideration.
- 1 2 3 4 5
15. In regards to my thesis, I did not get much of a chance to show how capable I was.
- 1 2 3 4 5
16. There were not many people that I worked on my thesis with that I was close to.
- 1 2 3 4 5
17. I felt like I could pretty much be myself while working on my thesis.
- 1 2 3 4 5
18. The people I interacted with while working on my thesis did not seem to like me much.
- 1 2 3 4 5
19. I often did not feel very capable when it came to completing my thesis.
- 1 2 3 4 5
20. There were not many opportunities for me to decide for myself how to do things on my thesis.
- 1 2 3 4 5
21. People I interacted with while working on my thesis were pretty friendly towards me.
- 1 2 3 4 5

Appendix D
HSRB Approval



A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH
HUMAN SUBJECTS REVIEW BOARD

In future correspondence, please refer to IIS10-164, February 5, 2011

Frank Reding,
c/o Dr. Sirooniak
Psychology
WKU

Frank Reding:


Your research project, *An Evaluation of the Impact of a Thesis Colloquium on Self-Reported Motivation toward Thesis Completion*, was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indicators of coercion or undue influence are absent, and that participation is clearly voluntary.

- In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required; (2) Provision is made for archiving, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data; (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Expedited Review Level until February 5, 2011.

- Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments, please re-apply. Copies of your research on human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project. Also, please use the stamped approval forms to assure participation of compliance with The Office of Human Research Protections regulations.
- This approval grants an authorization to conduct the study at WKU, and does not imply authorization at a different institution unless otherwise granted by the cooperating institution. Please provide any other Institutional Review Board approvals to the WKU Human Subjects Review Board upon receipt for your file.

Sincerely,


Paul J. Mooney, M.S., Ph.D.
Compliance Coordinator
Office of Sponsored Programs
Western Kentucky University



HSRB APPLICATION # 10-164
APPROVED 2/5/10 to 2/5/11
EXEMPT EXPEDITED FULLBOARD
DATE APPROVED 2/5/10

cc: HS file number Reding, IIS10-164

The Spirit Makes the Master

Office of Sponsored Programs | Western Kentucky University | 1906 College Camp Blvd #11076 | Bowling Green, KY 42101-1026
phone: 606-646-4652 | fax: 606-646-2221 | e-mail: paul.mooney@wku.edu | web: http://www.wku.edu/hsrb | compliance@humanSubjects.org
www.humanresearchprotections.org | get the facts: www.hhs.gov/ohrt | www.hhs.gov/ohrt/faq

Appendix E

Email to Potential Participants

Dear I/O Grad Student Alumni,

My name is Frank Reding and I am an I/O Graduate student at Western Kentucky University. I am emailing you to ask for your help with my thesis. My thesis project involves a short 10-minute survey that asks about the experience you had while writing your thesis and completing graduate school.

I realize that you are busy and likely receive many requests to answer surveys. Nonetheless, please give serious thought to completing my survey, as I am dependent on participation from professional I/O grads such as you. As an incentive, I have five \$100 gift cards to Amazon.com that will be randomly awarded to participants who complete the survey. I am sampling a small population, so your odds of winning should be pretty good.

Below is a copy of the informed consent, please read it over and if you have any questions you can contact me at Frank.Reding415@wku.edu or 270-303-0183. Thank you in advance for your time; it is greatly appreciated,

Frank Reding
WKU I/O Grad Student

Appendix F

Assent Page

Informed Consent

You are being asked to participate in a survey research project. Before giving your permission to participate, by continuing to the survey, we would like to explain the following:

1. Your participation is completely voluntary. This means you have the right to not answer any question you do not want to, or to quit at any time without any penalty.
2. For this study, you will remain completely anonymous. That is, you will not be asked to write down any identifying information, such as your name.
3. This study appears to have minimal risks and discomfort. However, there is always a chance that a question could cause discomfort or problems. Please let the researchers know if any questions are upsetting.
4. Benefits of this study include a sense of well being for contributing to scientific research, helping an industrial/organizational graduate student complete his thesis, and providing information that will be used to help better understand graduate theses. After completing the study, there will be an opportunity to enter a drawing in which \$100 gift certificates to Amazon.com will be awarded to five study participants.
5. During participation you will be asked to complete a section asking for about age, ethnicity, gender, your experiences pertaining to writing your thesis, and your experiences on your current job. Also, you will be asked to complete two short measures (16 items & 36 items) that evaluate your thesis experience. This survey should take about 10 minutes to complete.
6. Although your individual responses will remain anonymous, your data will be combined with the data of others and may be submitted for publication in scholarly journals or presented at conferences.

Clicking on "Enter the Survey," implies your informed consent to participate in the survey. Thank you.

Professor Betsy Shoenfelt, Ph.D., is the Faculty Sponsor for this research project and can be contacted at (270) 745-4418 or Besty.Shoenfelt@wku.edu, with any questions in regards to the study. Questions or complaints about research participants' rights can be directed to the Human Subjects Review Board, Western Kentucky University, Bowling Green, Ky 42101, or by phone at (207)-745-4652.