

WHAT HELPS AND WHAT HINDERS THESIS COMPLETION: A CRITICAL INCIDENT STUDY*

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ABSTRACT

The purpose of this study was to discover what helped and what hindered thesis completion in order to provide helpful guidelines for graduate students and supervisors. The methodology used was based on Flanagan's (1954) critical incident technique. The participants were Master's and Ph.D. students (N=20) who either were in the process of completing their theses or had just completed their theses. The semi-structured interviews were audio tape-recorded and transcribed

verbatim for content analysis. The results yielded 435 meaning units, from which 19 facilitating and 17 hindering themes were extracted. At least 50% of the participants stated the following facilitating themes: students' positive qualities; support from supervisor, family and friends; access to resources; a supportive and stimulating climate for thesis work; and supervisors' positive qualities. The main hindering themes included: distractions from thesis research; difficult data related processes; lack of understanding of the thesis writing process; and students' and supervisors' personal qualities. Counselling implications for these findings were discussed.

Thesis or dissertation remains the central requirement of graduate education for most universities for a variety of reasons. Glatthorn (1998) explained that thesis writing helped students learn about themselves and their researched areas. Owen and Burke (2004) maintained that thesis research prepared students for academic careers. Furthermore, thesis research is an essential component for the scientist-practitioner model of counselling and clinical education; therefore, the experience of conducting thesis research not only enables them to master a psychological topic, but also gives them greater appreciation of the need for evidence-based psychological practices.

Several books have been published to provide tips on thesis completion (e.g., Swetnam, 1995; Davis & Parker, 1997; Glatthorn, 1998). Yet, thesis completion remains a problem for many graduate students. There are still numerous ABDs (All But Dissertations). Garcia,

Malott, and Brethower (1988) provided evidence that many graduate students dropped out or delayed their graduation because of thesis incompleteness. There are no statistics in Canada on these students (Surrey, 2003). In American graduate schools, approximately 50 % of doctoral students fail to complete the programs for whatever reason (Myers, 1999, p. 2). Most universities have a time-limit policy for thesis or degree completion. Therefore, delay in thesis completion may result in a student being expelled from the graduate program. This can be devastating for graduate students who have invested so much of their time, money and energy without receiving a graduate degree. This also means waste of institutional resources and a reduction in producing scientists to meet market demands. The purpose of this study was to discover factors that facilitate or hinder thesis completion in order to provide evidence-based guidelines for both graduate students and their supervisors.

Factors that hinder thesis completion

Research (Morton & Worthley, 1995) showed several factors which hinder thesis completion, such as student employment, difficulty to balance between personal and academic lives, and insufficient training for thesis research. In their study, the most negative aspects of the thesis experience in the order of seriousness were: “problems within the thesis committee, the unwieldy administrative bureaucracy and complexity of the process, the time-consuming nature of the research process, and the fact that the process became more complex than necessary” (p. 350).

Rennie and Brewer (1987) coined the term “thesis blocking.” This phenomenon typically included “a situation wherein the interviewees had (a) finished their graduate coursework; (b) found the experience of working on the thesis more negative than rewarding; (c) according to their own estimates, spent an inordinate amount of time working on the thesis; and (d) considered themselves to have experienced thesis blocking” (p. 11). Some of the contributing factors to “thesis block” included the lack of a clear and realistic research project and a perfectionist tendency.

Rennie and Brewer (1987) concluded that the key to thesis completion was students’ perception of themselves as having a sense of control. The “nonblockers” tended to function independently while seeking help and emotional support when needed. They tended to find meaning in their thesis research, and were actively involved in turning the political games to their advantage. The “blockers” on the other hand, tended to get stuck in the dependent mode. They were either unaware of or un-interested in the political games related to the thesis process. The “blockers” generally had difficulties complying with deadlines.

Procrastination is another relevant factor. Haskins (1988) found that procrastinators “remain longer in the ‘perceiving’ mode ... expressing the need for more data” (p. 38). Non-procrastinators were more likely to be in the “judging” mode, and they were concerned about moving towards the outcome. Students’ age might also be related to procrastination. Stogner, Kosenko, Roche, Parks, and Barber (2003) compared academic procrastination

level between traditional and non-traditional college students. They reported that traditional students were more likely to procrastinate than the older non-traditional students, who also had a significantly higher overall grade point average. Wong (1998a) pointed out that “younger students tend to attend university because of external pressure and social interest, and older students are more likely to attend university for intrinsic reasons” (p.281). Therefore, older non-traditional students tend to do better academically and are less likely to procrastinate.

There is research evidence that difficulties with the thesis committee have a direct negative impact on thesis completion. For example, Glatthorn (1998) identified the following problems: lack of prompt feedback, conflicting and inconsistent feedback, and unhelpful advice. A worse case scenario would be that the relationship between a committee member and the graduate student deteriorates to a point where it actually jeopardizes thesis completion. Glatthorn (1998) also identified personal problems that students might experience at different stages of the thesis process; these included a change in career plans, financial limitations, feelings of insecurity and anxiety, difficulties in data gathering, and criticisms of the earlier drafts. Most of these personal difficulties stem from self-doubt.

Myers (1999) interviewed 11 doctoral candidates who had completed all degree requirements except dissertation research. Myers identified the following reasons for failing to complete the dissertation: “time, financial management, professional obligations and various personal aspects” (p. 63). The lack of

information and resources to address financial difficulties was clearly a secondary causal factor.

Factors that facilitate thesis completion

Morton and Worthley (1995) pointed out that a good working relationship with the faculty and the opportunity of learning how to think were some of the positive elements of thesis research. Dillon, Kent, & Malott (1980) reported the benefits of a structured supervisory system which included a written task specification, weekly deadlines, weekly monitoring, weekly feedback, and added incentives. A structured “Thesis Completion Program” has been implemented at the University of Victoria (Parsons, 2003). This program is based on the observation that graduate students need a moderate level of structure to guide them to set realistic goals with clear deadlines. The “Thesis Completion Group” meets every other week to discuss their goals and progress as well as to identify and solve any problems that might have been raised along the way.

Studies have also identified supervisor-supervisee interaction to be another factor (Markle, 1977). When supervisors were accessible, they were perceived by students as being helpful. Fenton (2002) suggested that a good writing environment would also help; “by writing regularly in this setting, [one] will establish good writing patterns essential for thesis completion” (p. 1).

Some general considerations

Surrey (2003) has identified five themes in his study on thesis completion:

- (1) Individual advisors tend to recommend a dissertation process with which they are familiar and comfortable. Thus, professors who prefer qualitative methods will recommend the same to their students.
- (2) Faculty members have different ideas regarding the amount of advising that students need. Similarly, there are individual differences among students – some prefer independence, while others appreciate hand-holding. There will be less conflict when there is a match between supervisor and supervisee regarding the amount of supervision.
- (3) Administrative expectations also have considerable influence on the dissertation process. Clear departmental guidelines and administrative roles will facilitate dissertation completion.
- (4) Departmental politics and personality conflicts between faculty, and the pressure experienced by untenured faculty all can affect the thesis process.
- (5) Maximum time limit set for each program affects the dissertation process. For doctoral degrees, the time limit varies from 5 to 7 years. For masters' degrees, it ranges from 2 to 5 years.

The most important general factor is probably the supervisor-supervisee relationship. Schlosser and Gelso (2001) stated that “advisor-advisee relationship can have a strong influence (both positive and negative) on advisee development as a scientist” (p. 157). They developed the Advisory Working Alliance Inventory (AWAI) to measure this from the graduate student’s perspective. They defined “advisory working alliance” as the “portion of the relationship that reflects the connec-

tion between advisor and advisee that is made during work toward common goals” (p. 158). They reported “a positive relation between the AWAI and measures of advisee research self-efficacy and attitudes toward research, as well as the perceived expertness, attractiveness, and trustworthiness of the advisor” (p. 157). Schlosser, Knox, Moskovitz, and Hill (2003) also emphasized that the graduate advising relationship could profoundly affect a graduate student’s professional development. When supervisors and supervisees have “a good rapport, process conflict openly, and work together to facilitate the advisee’s progress ... as an emerging professional” (p. 186), students would have greater professional success after graduation.

Given the importance of thesis completion, and the complexity of the process, more research is needed. The present study focused on the problem of thesis completion in a Canadian context, using a critical incident technique as originally developed by Flanagan (1954). This method allows researchers to map out what helps and what hinders in the behavioral domain of thesis completion. For an incident to be considered critical, Flanagan declared that “[the] incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects” (p. 327). Woolsey (1986) emphasizes that this technique can be readily applied to research in counselling psychology, because it focuses on actual activities or events that have critical or significant impacts on specific and well defined outcomes under investigation. In the present study, the outcome would be thesis completion. The critical incident technique has been

applied effectively in counselling psychology research with graduate students. For example, L. Wong (2000) examined what helped and what hindered clinical supervision of visible minority graduate students. Mah (1991) studied what facilitated and what hindered adjustment for graduate students in counselling psychology. Both studies were able to map out actual behaviors and attitudes that had a positive or negative impact on the outcome under investigation.

Method

Participants

The participants consisted of one Ph.D. and 19 Master's students who either were in the process of completing their theses or had completed their theses in the last year. They were recruited through the first author's personal contacts with graduate students, and advertising in various universities in Canada's West Coast. There were 11 men and 9 women, ranging in age from 23 to 36 years old. The mean age was 27.8 years. Nine of the participants were in Counselling Psychology and Developmental Psychology, while eleven majored in natural sciences. Among the participants, 9 were Caucasian, 8 were Chinese, one was Dutch/Italian, one was Japanese/Italian and one was Iranian. All the participants were interviewed by the first author.

Procedures

Efforts to recruit participants began as soon as the research project was approved by the university's Research Ethics Board. The first author's e-mail address was listed on the

advertising flyers along with other information about the present research. Individuals who met the sampling requirement of being either in the process of doing their theses or having recently completed their theses, were asked to send their contact information to the author's e-mail address. All of the potential participants were contacted through their preferred method of contact to further explain the purpose of the study, what was required of them, and the level of confidentiality and anonymity that would be respected. Once an individual agreed to take part, an interview appointment was made at a time convenient to the participant and in a quiet place for quality audio tape-recording.

At the beginning, the interviewer provided more information about the study and answered any further questions that the participant might have. Then the participant was asked to sign an informed consent prior to the interview. Sample interview questions are presented in Appendix A. The interviews were about half an hour each and were audio tape-recorded for content analysis to identify and classify critical incidents. At the end of the interview, a token of appreciation (i.e., a traveler's mug) was given to each participant.

Content Analysis

For the data analysis process, the researcher followed the seven steps developed by L.Wong (2000) as follows:

1. Read over some of the transcripts and listen to some of the recorded interview sessions to get the general sense of the scope and variety of the contents.
2. Identify positive and negative incidents respectively.

3. Identify the relevant meaning units (those that have direct bearing on the experience of thesis completion) by bracketing them with pencil.
4. Create a descriptor for each relevant meaning unit by writing them on the margins of the transcripts accordingly.
5. Create a database for all of the relevant meaning units with their respective descriptors.
6. Group the descriptors with highly similar meanings into themes.
7. Combine similar themes under broader categories.

The reliability test was conducted with the following procedure. A counsellor who had previous experience with critical incidents methodology was invited to be the judge of the coding scheme. A list of themes, definitions, and examples was given and explained to her. About 10% of the incidents were randomly selected for her to sort, one at a time, into different theme categories. An average of 84% agreement was found over all of the themes.

General Observations during interviews

It is helpful to consider the stages of the thesis research process. Logically, there are three stages: (1) Beginning stage, (2) Work-

ing stage, and (3) Finishing stage. Participants in the Beginning stage had just finished their thesis proposal and applied for ethics reviews. Participants in the Working stage, after obtaining all the necessary approvals, are in the process of recruiting participants, collecting and analyzing data. Lastly, the Finishing stage consists of actual writing and rewriting the thesis, and preparing for thesis defense.

Although we did not have enough participants in all three stages of development for meaningful comparison of themes, we found it helpful to recognize the differences found among participants in these three stages. For example, those who were in their Beginning stage tended to talk more about the problem of getting the ethics approval or thesis proposal approval. Those who were in their Working stage would talk more about difficulties with recruiting participants or analyzing their data. Those in the Finishing stage tended to focus on the process of writing and revisions. It is very important for administration and supervisors to be sensitive to the unique needs of graduate students in each stage of thesis research.

Summary of the results

There were 19 facilitating and 17 hindering themes as shown in Tables 1 and 2.

Table 1 - Themes that facilitate thesis completion

Themes	% of participants*	Frequency**
<i>Students' positive qualities</i>	80%	39
<i>Support from supervisor, family and friends</i>	80%	35
<i>Access to resources</i>	65%	17
<i>A supportive and stimulating climate for thesis work</i>	55%	13
<i>Supervisors' positive qualities</i>	50%	12
<i>External pressures from program, peers and supervisors</i>	45%	16
<i>General preparation in research and writing</i>	45%	11
<i>Feeling passionate about thesis topic</i>	40%	11
<i>Accountability with peers and supervisors</i>	40%	10
<i>Positive interactions with supervisors</i>	30%	6
<i>Financial support</i>	25%	5
<i>Research course</i>	25%	5
<i>General Courses</i>	20%	5
<i>Financial constraints</i>	20%	4
<i>Internal deadlines</i>	20%	4
<i>Learning from others' experiences</i>	15%	4
<i>Approval from thesis committee and peers</i>	15%	3
<i>Having plans after graduation</i>	15%	3
<i>Doing physical exercises</i>	10%	2

Table 2 - Themes that hinder thesis completion

Themes	% of participants*	Frequency**
<i>Distractions from thesis research</i>	80%	26
<i>Lack of understanding of thesis writing</i>	60%	17
<i>Difficulties in data collection</i>	55%	18
<i>Students' personal qualities</i>	50%	18
<i>Supervisors' personal qualities</i>	50%	18
<i>Lack of external resources</i>	40%	14
<i>Lack of support from peers, family, and supervisor</i>	30%	7
<i>Scheduling difficulties with supervisory committee</i>	25%	5
<i>A tense and uncomfortable environment</i>	20%	5
<i>Too many deadlines and restriction</i>	20%	4
<i>External pressures</i>	15%	4
<i>Interpersonal conflicts</i>	15%	4
<i>Financial needs</i>	15%	3
<i>The length of thesis process</i>	15%	3
<i>Lack of pressure from the department</i>	10%	3
<i>Peers' negative influence</i>	10%	3
<i>Lack of plans</i>	5%	2

Participants' suggestions for change

Suggestions for change were drawn from participants' personal experience of what facilitated and hindered their thesis completion;

therefore, they are similar to the facilitating and hindering themes found from the critical incident interviews. Their recommendations are shown in Tables 3 and 4.

Table 3 - Recommendations for supervisees

1. Set deadlines and stick to planned schedule
 2. Manage your time and priority
 3. Set goals for and after the program
 4. Find support from peers, family and friends
 5. Take advantage of available resources
 6. Know your learning styles
 7. Get to know your professors/supervisors
 8. Find meaning in your thesis work
 9. Do not procrastinate
 10. Read, write and be prepared
 11. Resolve conflicts quickly
 12. Be organized
 13. Exercise self-care
 14. Be your own project/thesis manager
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Table 4 - Recommendations for supervisors and administrators

1. Set Goals and timeline with the supervisees
 2. Collaborate with other professors
 3. Increase research-related courses; decrease irrelevant courses
 4. Set up thesis proposal and writing as a course
 5. Make resources more accessible online
 6. Provide more explanations on ethics approval process
 7. Enforce the program guidelines and deadlines
 8. Provide opportunity for students to get to know their potential supervisors
 9. Provide realistic time frame for the program
 10. Minimize the number of supervised students for each supervisor
 11. Provide more opportunities to learn from others
 12. Provide more accessible resources and better equipment
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Discussion

The process of categorization identified 19 facilitating themes and 17 hindering themes. Contrary to expectation, participants expressed more positive experiences than negative ones related to writing their theses. Valuable lessons can be learned for both supervisors and students from the various positive and negative themes.

Hindering Themes Related to Students

Many of the hindering themes found in the present study were consistent with previous research findings. The question of how much structure was needed remained controversial. Some participants complained that there were “Too many deadlines and restrictions in the program.” Other participants in this study felt that there were not enough clearly stated deadlines. Morton and Worthley (1995) reported that “students resist the transition from structured coursework to a more autonomous, independently managed research process” (p.350). On the other hand, Rennie and Brewer (1987) found that “individuals who get stuck when attempting to compose written material may operate too rigidly within a set of rules adopted from external authority” (p.11). The University of Victoria (Parsons, 2003) provided a “Thesis Completion Program” to help graduate students complete their thesis writing quickly and effectively. This program is based on the idea that a moderate level of structure is what students need to complete their theses.

The students’ cultural background might also influence their self-direction or structure in completing academic tasks (Tweed & Le-

hman, 2002). They stated that Western students prefer self-direction in academic tasks while culturally Chinese students prefer more directions and structures from a “competent teacher” or “authorities” (p. 95). Cultural differences can potentially affect students’ working relationship with their supervisors where there is a mismatch in terms of expectations and preference. The most frequent hindering theme was “Distraction from thesis research.” Distraction would include extra responsibilities outside the school, recreational activities, and life events. Unlike the typical undergraduate student, graduate students tend to be older and have more family responsibilities, if they are married. For example, some female students take maternity leave or spend less time on research because of giving birth and caring for a baby. This problem of distraction from thesis research may become more frequent due to the increase in enrollment of nontraditional students (e.g., women with families) in graduate studies.

Morton and Worthley (1995) also identified difficulties with balancing between personal and academic lives as a hindering factor in students’ ability to complete their theses. Glatthorn (1998) stated that towards the end of students’ coursework, they might have a change of career plans, values or priorities, which could distract them from completing their theses. Furthermore, in the research conducted by Myers (1999), it was found that 64% of the participants stated that “family or other personal obligations took time away from working on [their] dissertation” (p. 62). Myers (1999) also found that 73% of the participants identified paid jobs or professional responsibilities as hindrances to dissertation comple-

tion, because time was taken away from working on the dissertation.

Over 50% of the participants in the present study cited “Lack of understanding of the thesis writing process” as a major hindrance in thesis completion. Morton and Worthley (1995) reported that some students were of the opinion that “the training provided within their core courses may not prepare them adequately to design and complete a realistic research project” (p. 349). The lack of understanding can also be due to graduate students’ insufficient research background. For example, the student may have come from a different discipline and have not received sufficient training in research methodology.

Another important hindering theme is “Students’ personal qualities.” Glatthorn (1998) suggested that fear arising from the “lack of knowledge and from their own insecurity” (p. 211) may hinder thesis completion. Myers (1999) found that participants ranked “frustration and/or loss of interest” (p. 61) the biggest barrier to the doctoral degree completion. The frustration, negative feedback, difficult relationship with the supervisor, or a change of interest, could easily make the student lose the initial enthusiasm he or she had for the project. From our experiences with graduate students, we find that a certain amount of personal maturity is needed to handle frustrations, setbacks, and negative feedback in a constructive manner. More importantly, as suggested by some of the participants in the present study, graduate students need to be their own thesis project managers by taking responsibilities for their thesis progress. Rennie and Brewer (1987) stated that when students do not gain

control over their thesis projects, they tend to get stuck in the dependent mode. This can be discouraging and even paralyzing for students who are already starting to lose interest.

Hindering Themes Related to Supervisors

“Supervisors’ personal qualities” and “Interpersonal conflicts” are hindering themes related to supervisors. Negative behaviours and attribute of supervisors, such as having no time for supervisees, too demanding, delaying in giving feedback, changing experimental procedures mid-stream, inconsistent feedbacks, would contribute to dissatisfaction and conflict. In the midst of their busyness with research, teaching and administration, professors often do not take the time to explain to supervisees clearly what is expected. Professors need to consider the fact that frequent changes, especially ill-thought-out impulsive changes, cause delay in thesis completion. A common source of conflict is the long delay in providing feedback, which increases students’ resentment towards to supervisor. Although not documented, unfortunately there are many reports of supervisor-supervisee conflicts. Both supervisors and supervisees need to learn how to prevent and resolve conflicts in order to facilitate thesis completion.

One of the participants in the present study stated that his supervisor asked him to redo the experiment so many times that the thesis was completed two months after the university-allotted time limit. Glatthorn (1998) suggested talking to the committee member directly about the problem or inviting the committee chair to help mediate between the two; but this may result in retaliation from

the supervisor. It would be helpful to students if administration would provide some kind of mechanisms to protect graduate students from unreasonable demands and abuse of power by supervisors.

Hindering Themes as a Consequence of External Factors

Many of the participants in this study stated that they experienced energy and time loss for thesis work because they need to work for pay. The theme of "Financial constraints" has been reported by other researchers. Morton and Worthley (1995) agreed that many students were unable to handle the financial hardship of attending graduate schools. Glatthorn (1998) also listed financial limitations as one of the personal problems students may experience. In another study, over 70% of the participants stated that "personal finances were a contributing factor to their not completing the doctoral degree" (Myers, 1999, p. 62). Spending too much time working as a teaching/research assistant or getting a full-time employment clearly slows down thesis completion,

Interestingly, receiving continued and generous funding may also serve as a disincentive for students to complete their thesis research quickly. Some supervisors might want to keep their best graduate students as long as they can, because these students are valuable assets to the supervisors' own research programs. In some cases, these supervisors may deliberately delay thesis completion by withholding feedback and making extra demands on their students, such as contributing to professors' own publications and conference presentations.

The theme "Peers' negative influence" comes from the perceptions that their peers are also having difficulties completing their theses. Thus graduate students might feel that their lack of progress is an acceptable norm. A related hindering theme is "The length of thesis process is discouraging." The participants described the entire approval process, from proposal, ethics approval, data collection, and thesis defense as being too long and too tedious. This finding was consistent with the report by Morton and Worthley (1995) that some of the negative aspects of students' thesis experience included "the time-consuming nature of the research process, and the fact that the process became more complex than necessary" (p. 351).

Students are motivated when they have a definite deadline for graduation, a goal to strive for. This was implied by many of the participants in this study who stated that "Lack of plans for and after graduation" is hindering. Glatthorn (1998) presented another reason for having definite plans after graduation because many students described the time after their thesis defense as "postpartum depression... with a general sense of emptiness [and] bleak uncertainty" (p.217). Without a clear sense calling or life goal after graduation, students may not be eager to venture out into the real world, and therefore, delay their thesis progress.

Facilitating Themes

The theme "Positive interactions with supervisors" is consistent with prior research. This is probably the single most important fa-

ilitating factor. Positive relationship is important in any kind of supervisory relationships. When supervisees feel that their supervisors are trustworthy, helpful and supportive, their experience of supervision would be encouraging and rewarding. Feeling good about the supervisory relationship will go a long way in motivating students to overcome difficulties and complete their thesis writing.

The theme of “Learning from others’ experience” corroborates Swetnam’s (1995) observation: “When two previously unacquainted thesis-writers discover each other, there is usually an instant connection. Both tacitly understand the pain, the hardships, the frustration of pushing through a year-long project in a way that no other peers can” (p.1). Indeed, participants feel encouraged and inspired when they witness their peers succeeding in completing various thesis tasks and in their final oral defense. Thus, it is helpful to be around those who are doing well in their thesis research.

Another study by Kennett and Stedwill (1996) reported that students were able to “experience success and support from their groups... and come to see themselves as competent students and valued by their peers” (p.177). Their finding is consistent with the theme “accountability with peers and supervisors” in the present study. Some of our participants stated that being involved in a peer thesis support group contributed to their thesis completion. Such a group typically involved three to four peers, meeting regularly to keep each other accountable on thesis progress. Group meetings also provided students a time and place to vent their frustrations and stress. Several participants from the present study

also suggested that the accountability with peers and supervisors was helpful. Graduate students and graduate program coordinators need to consider the helpfulness of organizing thesis support groups.

In the present study, 45% of the participants acknowledged the facilitating theme of “General preparation in research and writing.” General preparation included having related job experiences, writing courses, reading literature, completing required courses, selecting a suitable supervisor, and recruiting committed participants. Similarly, 60% of the participants stated that “Lack of understanding of the thesis writing process” was hindering; this theme included: the lack of knowledge in the research topic, the thesis process, research methodology, and supervisor selection. Any of these deficiencies could create problems for the students, if there were no intervention or remediation.

Theoretical Model

According to Wong (1998a), both causal attribution and existential attribution are important in the domain of achievement behavior. The former “concerned with the cause(s) attributed to an outcome” and the latter “concerned with the reason or purpose” (p.275). Both types of attribution are relevant for academic achievement. Weiner (1979, 1985) has shown that causal attribution can affect expectancy and outcome. For example, if a student attributes a negative outcome to stable factors, such as lack of ability or task difficulty would contribute to thesis non-completion. Wong (1998a) has demonstrated that the existential attributions of intrinsic motivation in learning education and the extrinsic motivation of

career goals would increase academic success and contribute to thesis completion. The present findings clearly support both Weiner's and Wong's attribution models.

In addition to the existential attributions of positive meaning and purpose, resourcefulness can also facilitate thesis completion. Kennett and Stedwill (1996) stated that people with resourcefulness skills "are most likely to persist, try hard, and achieve their goals despite the difficulties they encounter" (p. 180). In contrast, those with low resourcefulness skills are most likely to give up.

Contributions and limitations

This study provides the most comprehensive list of facilitating and hindering factors for thesis completion in the literature to date. This study also provides a unique perspective from students who are in different stages of the thesis writing process. Their experiences can serve as a helpful guide for future graduate students and thesis supervisors, so that they can avoid the pitfalls and focus on the facilitating factors.

The results have important implications for meaning-centered counselling (Wong, 1998b). First of all, the study showed that having a sense of passion and intrinsic interest is an important key to thesis completion. Secondly, having a clear direction or life goal will provide added motivation for pursuing and completing postgraduate education. Finally, to improve supervisory relationship, it is important to achieve some level of mutual understanding. This can be achieved through a clarification of intended meanings regarding expectations

and preferences. Since unresolved conflicts between supervisors and graduate students exact a heavy toll on both parties, the study provides the much needed information on how to prevent conflicts and improve working relationships.

The small sample size limits the external validity. Furthermore, there is insufficient number of participants in each category. For example, there are 19 Master's students but only one Ph.D. student. This study also did not compare in detail the responses from students in different disciplines. For example, science students tend to relate theses to their lab experience while social science students tend to concentrate on the writing process. This study also lacked the perspective of the supervisors since the result is merely based on graduate students' perspectives.

Future research

There are many possible future research projects that can be derived from this study. For example, one can take the specific facilitating or hindering factors to test whether it is valid for graduate students in different fields, genders, or cultures. This can also open the door for a more comprehensive dissertation study on the topic of thesis completion. A detailed comparison between Masters and Ph.D. programs might also be beneficial. Since this study is based on graduate students' perspective, a critical incidents methodology can be applied to gain insight from supervisors' perspective.

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