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FEATURE

Communication Literacy in Doctoral Research Supervision

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Abstract: *Doctoral supervision has become an important research focus as universities face accountability, quality assurance, and financial pressures. Using a correlational—explanatory and predictive—design, this study investigated the relationships between student perceived supervisors' communication competence, supervisors' nonverbal immediacy, students' communication satisfaction, communication mediation, communication frequency and supervisory style. A questionnaire in an online format was utilized to collect pertinent data for this study. A total of 374 research students from 14 countries completed the survey. The predictive model for supervisory style accounted for 83% of the variance. Results indicate that effective supervision is nurtured by a supervisory style high in support and structure that is based on quality and quantity of communication.*

The recent explosion in information and communication technologies has significantly reshaped our society. In an increasingly global economy, working with knowledge becomes of fundamental value; it is the key to innovation, competitiveness and economic growth (Information Society Commission, 2002). Knowledge societies depend on how well educational institutions achieve their responsibility to educate people. More than ever, there is a need for graduates who are critical and creative thinkers, technologically literate, and lifelong learners. Critics say that universities and graduate schools are producing academics, but not research entrepreneurs (Taylor & Beasley, 2005). This points out the importance of strengthening research training and higher education.

Universities face great pressure in the areas of quality assurance and increasing accountability. The doctoral education context poses particular

challenges due to low and long completion rates (Brown, 2004), the growing and increasingly heterogeneous student population (Taylor & Beasley, 2005) and the ambiguous nature of interactions between supervisor and student (Grant, 2003, 2005). This calls for increased scrutiny of existing supervisory practices.

Related Literature

Doctoral Supervision

Supervision is perceived as "central to successful graduate research" (Grant, 2003, p. 175). "Supervision is the mainstay of teaching at the level of research higher degrees. It involves the supervisor acting as mentor, guide or adviser to an individual seeking to be inducted to a specialized academic community" (Parry & Hayden, 1999, p. 37). The research phase seems to be a stage in doctoral education where sensitive guidance by a supervisor is needed most. For many students, writing a dissertation is unentered territory, and research skills such as critical thinking, finding resources, and academic writing are underdeveloped. The high degree of independence and academic expectations can be a challenge leading to disorientation (Acker, 2001). Negative feelings and challenges during the research phase are often connected to the student's experiences with their supervisor (Holbrook & Johnston, 1999). Literature suggests that the proportion of students dissatisfied with supervision ranges between 20 and 30% (Lamm, 2004). Given the challenging nature of research, supervisory guidance and support is of great value. It calls for an increased scrutiny of existing supervisory practice. A critical question is how postgraduate supervision can be improved.

Effective supervision requires a variety of knowledge and skills. For a long time, "the primary requirement to supervise the research of doctoral candidates was to be a researcher" (Taylor & Beasley, 2005, p. 217). Nonetheless, from the present perspective, this is far short of sufficient. A qualitative study illustrates this point (Andrew & McKenzie, 2001). Here, students expressed that their supervisor should have different characteristics: sufficient knowledge in the research area (including the most relevant literature and methodology); awareness of university policies, students' different learning styles and students' personal problems; ability to assist students in future employment and publications. Findings such as these highlight the fact that being a good supervisor requires not only knowledge and skills in research, but also in counseling and pedagogy. Furthermore, in order for supervision to be effective, supervisors and students need to build good working relationships with each other (Taylor & Beasley, 2005). This requires supervisors to have various supervisory styles, and to be able to adapt to students' needs (Pearson & Brew, 2002). *Supervisory style* can be defined as "the manner in which a supervisor carries out the supervisory process and is interpreted as a manifestation of the

supervisor's understanding of the student's research supervisory needs" (Kam, 1997, p. 82). Gatfield's (2005) qualitative study contributed to building and validating the conceptual dynamic model, which clearly defines four doctoral supervisory styles: laissez-faire, pastoral, directional and contractual, extracting two major dimensions: "support" and "structure". No style is considered better than another. Although supervisors seem to have a preferred supervisory style, depending on the student's needs and the situation, changes in operating styles will become necessary (Gurr, 2001). However, there is some evidence that high supportive and directive supervision seems to support faster completion rates (Smeby, 2000). So, what contributes to a more supportive and directive supervisory style?

Interpersonal Communication

Bochner (as cited in Knapp et al., 2002) in his definition of the term "interpersonal communication" acknowledges the involvement of "at least two communicators; intentionally orienting toward each other; as both subject and object; whose actions embody each other's perspectives both toward self and toward other" (p. 9). Those two communicators may be physically close to each other in face-to-face interaction, or their interactions may be mediated by technology such as telephones or computers (Knapp et al., 2002). Supervisors and students engage in communicative behavior, sending each other verbal and/or nonverbal messages, whether intentionally or not. In supervisory relationships the supervisor and doctoral student may perform source as well as receiver functions, with both parties originating and receiving verbal/nonverbal messages.

Interpersonal communication competence is important for successful relationships (Fisher & Adams, 1994). As was pointed out earlier, research knowledge alone does not guarantee whether it can be transferred to the doctoral student. But, "communication is the crucial link between a knowledgeable teacher and a willing student" (McCroskey et al., 2006, p.1). Therefore, it is argued, supervisors need to be competent in their communicative behaviors. The same is true for doctoral students. The present study suggests that essential behaviors of the general construct of communication competence are formed by assertiveness, responsiveness, and cognitive flexibility (McCroskey, 2007). According to the literature, these three components together form the socio-communicative style of a person, which "refers to a communicator's skill in initiating, adapting, and responding to the communication of others" (Wanzer & McCroskey, 1998, p.44).

In order to understand interpersonal communication, it is essential to analyze verbal behavior as well as nonverbal communication (Knapp et al.,

2002). Nonverbal communication in lay terms is often called body language. However, experts define the concept more specifically as behaviors that can function as messages. "It includes those behaviors other than words themselves that form a socially shared coding system" (Burgoon & Hoobler, 2002, p. 244). *Nonverbal immediacy* has been perceived as one of the most powerful dimensions of nonverbal communication (Slane & Leak, 1979). Immediacy was originally conceptualized by Mehrabian (as cited in Baringer & McCroskey, 2000; Garrott, 2002) as nonverbal behaviors that enhance closeness, communicate liking, a positive evaluation of others, or positive affect to others. Nonverbal immediacy includes behaviors such as looking at others, facial expression, vocal paralanguage, hand gestures, smiling, interpersonal distance, and touching. The more a communicator employs immediate behavior, the more others will feel comfortable, evaluating highly and preferring that communicator.

There is a lack of research studies on communication within the doctoral supervision context, although there is increasing pressure on degree granting institutions to perform. This study seeks to fill that void while answering the following research questions.

1. What is the relationship between students' perceptions of supervisors in the areas of communication competence, nonverbal immediacy and supervisory style?
2. Given the variables of this study, what is the best predictive model of supervisory style?

Method

A descriptive and correlational research design using online surveys best suited the purpose of this study to describe and examine the relationships among the different variables. Within the correlational design, the present study applied explanatory and predictive designs (Creswell, 2005; Fraenkel & Wallen, 2006).

Four instruments were utilized to collect pertinent data for this study. This unique combination of instruments included the Socio-Communicative Style Scale (SCS; Richmond & McCroskey, 1990), the Cognitive Flexibility Scale (CFS; Martin & Rubin, 1995), the Nonverbal Immediacy Scale (NIS; Richmond et al., 2003) with additional single items for mediation, communication frequency, and overall communication satisfaction; and a researcher-developed Supervisory Style Questionnaire (SSQ), for the assessment of perceived supervisory style. For supervisory style, two separate factors, 'support' and 'structure', could be identified. All instruments were found to be highly internally consistent (with Cronbach's alpha >.7) and were included in an online

questionnaire format using the open source survey program Lime Survey (version 1.53+). The combination of these scales as well as the development of a quantitative instrument for supervisory style is a unique contribution of this study.

For this study, the population consisted of PhD students in the social sciences involved in research activity in the academic year 2008. Convenience and purposive sampling procedures of available tertiary institutions were adequate to obtain a suitably representative sample of PhD candidates for this study. Ethical clearance was gained from the deans and/or ethical review boards of all the participating institutions.

A total of 27 universities agreed to participate in the research study: 12 from Australia, 1 from Canada, 1 from New Zealand, 1 from Norway, 1 from South Africa, 5 from the UK and 6 from the US. On behalf of this researcher they (mostly the faculty dean, director of postgraduate studies or director for research and research training) forwarded an announcement to a doctoral student list or published it in the institutions'/faculties' (electronic) bulletin inviting students to participate in the online survey. This researcher contacted students from three interuniversity research schools in the Netherlands directly (emails were published on the institutes' homepages) as well as from one institution in the Philippines (where this researcher was enrolled at the time the study was conducted). Furthermore, the Graduate Student Council of the American Educational Research Association forwarded an announcement using their listserv. A total of 374 research students from 14 countries completed the survey.

Results

The relationship between dependent variable (supervisory style) and independent variables (supervisors' socio-communicative style, cognitive flexibility, nonverbal immediacy) was investigated using the Pearson-product-moment correlation coefficient. The focus was directed at the strength of relationship and the amount of shared variance.

Results indicated strong, positive relationships between the SCS and the CFS [$r = .74$, $n = 356$, $p < .001$], the SCS and the SSQ [$r = .79$, $n = 356$, $p < .001$], and moderate relationships for the SCS and the NIS [$r = .55$, $n = 355$, $p < .001$]. High levels of supervisors' cognitive flexibility, nonverbal immediacy and supervisory style were correlated with high levels of socio-communicative style. Supervisory style and socio-communicative style are associated to the extent of explaining mutually 62% of the variance in respondents' perceived scores, and in a similar manner with cognitive flexibility 55%, and nonverbal immediacy 30%.

The CFS showed a moderate, positive relationship with the NIS [r = .59, n = 355, p < .001] and a strong relationships to SSQ [r = .80, n = 356, p < .001]. Higher scores on the NIS and the SSQ were correlated with higher scores on the CFS. While the relationship between supervisory style and cognitive flexibility explained around 64% of the variance mutually, nonverbal immediacy explained 35%.

Lastly, there was a moderate, positive correlation between the NIS and the SSQ [r = .51, n = 355, p < .001], with higher levels on the SSQ associated with higher levels on the NIS. Supervisory style explained 26% of variance in NIS scores.

In summary, findings suggest that students' perceptions of supervisory style are strongly associated with supervisors' communication competence and nonverbal behaviors. Furthermore, supervisor related communication variables confirmed strong correlations among each other.

Prediction of Supervisory Style

Standard Multiple Regression (simultaneous method) was employed in order to predict supervisory style from independent variables. The resulting model accounted for 83% of the variance explained in supervisory style (R^2 = .83). This finding was statistically significant at the p < .001 level. Six variables made a statistically significant contribution to explaining supervisory style. Results suggest that supervisory style is predicted to a great extent by communication variables. This is reasonable since the supervisor via interpersonal communicative behaviors transports messages of support and direction. A supportive and directive supervisory style is seemingly most associated with students' overall communication satisfaction (ß = .37) and with other highly associated variables, including cognitive flexibility (ß = .33) and supervisors' responsiveness (ß = .27). A more supportive and directive supervisory style was associated with student perceptions of high communication satisfaction, high supervisor cognitive flexibility, high supervisor responsiveness, high communication frequency, and high supervisor assertiveness. Regarding communication, a more anonymous communication medium (a written form rather than face-to-face) was associated with less support and less direction, both of which were considered positive supervisory traits.

Discussion

To improve student satisfaction with supervision, supervisors could be guided to first consider improving the quality of interactions that satisfy, show

cognitive flexibility and responsiveness since these seem to have a greater impact. Secondly, the medium of interpersonal communication, communication frequency and supervisors' assertiveness can also be addressed, but with less effect, when alterations in supervisory style towards giving more support and direction are desired. This suggests the importance of establishing mutual expectations, the value of seeking formative feedback from students during the supervisory experience, and the advisability of holding training sessions for research supervisors to develop these and other research guidance skills.

Besides content and research knowledge, effective supervisors require teaching-related knowledge and interpersonal skills. This research supports such a claim with respect to interpersonal communication competence. Three related subscales—cognitive flexibility, responsiveness and assertiveness—were confirmed in this work to be significant predictors for a supportive and directive supervisory style.

This study's unique contribution lies in its exploration of students' perspectives of the impact of interpersonal communication in the context of supervision. Correlation and regression analyses alike showed significant associations between supervisory and interpersonal communication variables. The manner in which supervisors carry out supervision seemed greatly enhanced by quality and quantity of interpersonal communication. In particular, existing communication skills (see correlation and regression analyses), nonverbal behavior (see correlation analysis), how frequently both parties communicate with each other (see regression analysis), and the medium used for communication (regression analysis) proved to be beneficial. Effective supervision is based on effective communication, verbal and nonverbal, since it is the vehicle to transport supportive, helpful messages, to give feedback and clear directions. Whether the supervisor shows flexible, responsive, and assertive behaviors or maintains eye contact, leans toward students, smiles while talking or has a relaxed body position are indicators that may imply support and personal interest. Frequent interaction and face-to-face encounters matter to students from different universities and countries. Supervisors and students alike are encouraged to seek frequent interaction and exchange. At the same time, skill training for supervisors regarding effective communication is suggested. Supervisors might be good researchers, however, this does not make them good communicators of research skills. If supervisors want to exercise a highly supportive and effectively directive supervisory style they need to know how to communicate, support and direct effectively. They need skills in initiating and responding to the communication with their students in a helpful, sensitive, sincere and friendly manner, as well as skills in being flexible and adapting to different situations and students' needs. Therefore, it seems appropriate to encourage incorporating communication training in supervisor development programs, and to make these programs more readily available to supervisors in

general. In interpersonal communication both parties are involved. Hence, in order to nurture effective doctoral research supervision, students and supervisors alike are encouraged to further aspire to—communication literacy.

Limitations and Recommendations for Future Research

The present study is based exclusively on students' perceptions. A full understanding of the factors that facilitate supervisory style requires assessment of and input from supervisors as well. In this study, only the communication competence and nonverbal immediacy of supervisors was addressed. However, in interpersonal communication, both parties are involved. Thus, it would be interesting to find out in future research whether the communication competence of students also affects supervisory style and thus would improve the model. Future research might be helpful to further validate the self-constructed SSQ. Although content validity, face validity, criterion validity and construct validity were established in the present study, replication with another doctoral student sample would verify its quality. Furthermore, future studies are encouraged to address participants from other (non-Western) countries or other disciplines than the ones investigated here, distinguishing also between domestic and international students. The present results as well as prospective future studies on factors influencing supervisory style will hopefully encourage discussion and facilitate implementation towards quality improvement in doctoral education.

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