Knowledge acquisition through positive educator/scholar cooperation.

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Summary - *Crynodeb*

The aim of this paper is to explore the relationship between educators and scholars with regard to how knowledge is disseminated and attained in terms of classroom delivery, handling questions and studying, and how these are applied in an educational establishment. A study was undertaken that involved the researchers observing business studies teaching sessions and then discussing separately with students and teachers, through group and in-depth interviews, aspects of the instruction, including benefits and criticisms. The research was exploratory and took place in one location. The sample was limited to twelve tutors who agreed to participate and this resulted in nine successful observational sessions. The outcome suggested better ways of motivating both students and teachers in terms of becoming more engaged in two way dialogue including what we term a 'think-pair approach' that involves a two way understanding of idiosyncratic issues which we propose can lead to a more involving studying experience

Nod y papur hwn yw archwilio'r berthynas rhwng addysgwyr ac ysgolheigion ynghylch y modd y caiff gwybodaeth ei dosbarthu a'i sicrhau i'w darparu ar lawr dosbarth, gan drafod cwestiynau ac astudio, a sut y defnyddir y rhain mewn sefydliad addysgol. Cynhaliwyd astudiaeth a oedd yn cynnwys ymchwilwyr yn arsylwi sesiynau addysgu astudiaethau busnes ac wedyn trafod y rhain ar wahân gyda myfyrwyr ac athrawon, trwy gyfweliadau grŵp a rhai manwl o dan yr wyneb, agweddau ar yr hyfforddiant, gan gynnwys manteision a beirniadaethau. Gwaith ymchwil archwiliol oedd hwn ac fe'i cynhaliwyd mewn un lleoliad. Roedd y sampl yn gyfyngedig i ddeuddeg tiwtor a gytunodd i gymryd rhan ac arweiniodd hyn at naw sesiwn arsylwi lwyddiannus. Awgrymodd y canlyniad ffyrdd gwell o gymell myfyrwyr a thiwtoriaid o ran ymgysylltu'n fwy â deialog dwy ffordd, gan gynnwys yr hyn a alwn yn 'ddull pâr-meddwl' sy'n golygu dealltwriaeth dwy ffordd o faterion idiosyncratig, a gall arwain, yn ein barn ni, at brofiad astudio sy'n ein cynnwys ni'n fwy.

Key Words: Achievement, Motivation, Beliefs, Learning, Dialogue, Questioning.

Introduction

Literature implies that questioning by teachers is unimportant unless it has beneficial effects on the performance of students and such questioning should focus on appreciating the results of learning, arousing and inspiring interest, and motivating them to search for information. This implies that questioning and discussion are critical tools for appraisal and evaluation and it mutually assists students and teachers and allows students to improve their learning and thinking abilities.

A conduit to student education

Questioning of students determines a process of functioning in classrooms and offers a means by which knowledge is challenged. Such questions can assist students when associating classroom knowledge and personal experiences.

This study examines the extent to which questioning can increase the participation of students in their study situation. It considers matters challenging teachers and in so doing exposes pressures that educators encounter. In making these issues explicit, the study urges teachers to carefully ponder their teaching customs.

Theoretical background

The complexity of the concept has made it difficult for researchers to agree what classroom questioning is, and such research indicates that questioning is second only to lecturing in popularity as a teaching method, and teachers spend from 35 to 50 per cent of their teaching time facilitating question and answer sessions (Kerry, 2002). When raised by teachers, questions are educational cues intimating to students content and elements to be learned. Aqvist (1979) classifies questions as special types of commands in which the questioner's desire for knowledge can be met. People ask questions to acquire knowledge. Implicit in questions is the recognition of the idea that what is questioned is known or can be found.

Researchers who have investigated questioning contend that the nature of questions cannot be grasped by just looking at their forms (Walsh & Sattes, 2005) and argue that questions are special kinds of declarative verdicts that require deliberation of conceivable alternative answers. It may be that teachers allow for an understanding of levels of knowledge and understanding. For students to know this allows them to evaluate their existing state of knowledge and signifies potential routes for the investigation. Teachers, in responding to students' questions, serve to certify their knowledge and inspire them to continue questioning.

Students who make connections between new content and personal experience are engaging in useful long-term learning. In addition, these students develop inherent motivation and skills of enduring learning. Barell (2003) summarises the nature of good questions as reflecting a genuine desire to find; a deep feeling for wanting to know more than we already know, and helping us think. It is transcendent, and helps us move beyond immediate data or experience (p. 60). He also challenges teachers to create an ethos of curiosity to help students acquire abilities to ask good questions. He suggests modelling as a strategy for attaining these goals. Dantonio (1990) challenges us to place our thinking operation into teaching questions and points out four principles of developing effective questions that should:

(1) Contain words that are easily understood by learners;
(2) Be stated simply; not cluttered with additional questions or explanations;
(3) Focus students on content;
(4) Identify the thinking operation students are to use in answering the question.

These questions should be sequenced to create opportunities for constructing concepts and other forms of thinking systems. Perkins (2003, p.13) asserts: "As teachers ask good questions, they are modelling thinking for students. To ask good questions, teachers need to have in-depth knowledge, and have to preview the text to generate questions that will take students to more complex thinking". He suggests that quality questions help students think about what they read, and do something with it. Effective questions help provide the scaffolding for student learning.

Questions capture and support the curiosities of students and encourage them to think about and learn the substance and abilities on which they will be tested. Oakes & Lipton (1999) maintain that the role of the teacher is to identify potential areas of learning for each student and pose questions or provide direct instruction that will assist them in mastering content and concepts within their zones. Questions and structures serve as scaffolds to help students to extend knowledge. Students not working within their zones are working with content that has already been mastered (and are likely to be bored) or they are working beyond their readiness levels and are frustrated (Oakes & Lipton, 1999, p. 81). Scaffolding is a sequential framework of core questions that guide student thinking from one type of cognitive operation to a different type until the cognitive operation is completed thus creating question patterns and make a skill-using procedure explicit. It becomes the syntactical structure of core questions that signal each change in a cognitive operation, so students can follow appropriate steps.

In our endeavour to instigate and influence reflective classroom dialogue, we must ensure that the action words chosen for our core questions prompt distinct kinds of mental process. We must be aware of the kinds of cognitive operation we want students to use in answering core questions. Gall (1973, pp. 3-4) proposes seven attributes that can be used to assess the quality of student responses:

(1) Clarity: the learner answers in understandable language without mumbling, failing to finish or confusing his/her thoughts;
(2) Accuracy: the learner's answer contains no factual errors and is based on accurate information;
(3) Appropriateness: the learner answers the question that was asked;
(4) Specificity: the learner clearly identifies who and what he/she is talking about;
(5) Support: the learner gives reasons, facts or examples to support a statement, or explains the criteria or assumptions on which an opinion is based;
(6) Complexity: the learner's answer shows awareness that there are many ways of looking at the problem being discussed, and options must be considered before a valid judgement can be reached;
(7) Originality: the learner draws upon current knowledge and past experiences to create or discover ideas that are new.

He suggests that in classroom discourse, teachers must constantly assess each student's response. On-the-spot decisions must be made to determine how well each student understands what he or she is saying. Actively listening to student responses and using their responses in asking timely, thoughtful follow-up questions fosters occasions for teachers to delve into student thinking and promote instructional conversation. Students' responses unveil how they think about things and how they monitor their thinking operations. This is referred to as 'metacognition'. Flavel (1976, p. 232) explains this as "one's knowledge concerning one's cognitive processes or anything related to them, for example the learning-relevant properties of information or data". Metacognition consists of three types of knowledge: declarative, procedural and conditional. Declarative knowledge is our overt understanding of something. It is what rises to the top of our minds and is the information or knowledge that we share. Procedural knowledge refers to the mental steps, processes or phases that represent how we arrive at information, or the details of how a cognitive operation is carried out. Conditional knowledge determines appropriateness. It relays the conditions under which something is to be done or applied. Metacognition engages learners in active monitoring and regulation of their cognitive operations while they are involved in instructional conversations.

The values of communicating and connecting with others are reflected in asking productive questions, and giving sufficient information. Dantonio & Beisenherz (2001, p. 44) argue : "To produce quality in terms of conceptual thinking students, and for students to apply productive questioning practices to their learning strategies, they must be able to understand what, how, and under which conditions they need to use particular thinking operations". Walsh & Sattes (2005) contend that more than 40 per cent of teachers still use the traditional mode of teaching; a linear process of instructional modality which classifies students as passive recipients of information. They argue that the vision of a classroom as a community of learners challenges traditional views of teaching, learning and questioning. The conventional model of teaching as 'knowledge transmission' treats students as sponges that absorb wisdom. They believe classroom learning is a social activity that requires students to interact with their tutors and peers as they engage with the content. This view of tutor and student roles acknowledges that questioning is a core function of both learning and teaching.

Research indicates that question levels should be related directly to learner objectives. To research the effectiveness of higher order and lower order questions, Bloom (1987) has been widely referred to and accepted as a means of classifying classroom questions. In most of these studies, teacher questions intended for knowledge and comprehension levels are defined as lower-level questions. Teacher questions intended for application, analysis, synthesis and evaluation were coded as higher-level questions. Bloom's theory has been criticised by Askew & Lodge (2000) for its lack of contextual consideration in a learning environment. They developed an alternative taxonomy which incorporates the social environment of learning as an enabler of interaction and positive feedback.

This paper examines how questioning and feedback could improve student learning. A collaborative investigation was developed with tutors and learners that addressed their concerns, involved them in the research process and aimed to improve classroom practice. The study recognised that learning occurs in a co-constructive environment, where feedback is a dialogue, formed by loops connecting the participants. Askew & Lodge (2000) identified three disparate models of teaching: receptive-transmission, constructive and co-constructive frameworks and argued that most tutors are involved in receptive-transmission and constructive models of teaching which are detrimental to the development of an interactive learning environment. Following this, they further argued that learning is a reciprocal process which incorporates a dialogic feedback formed by a loop connecting all participants.

Contrary to rational belief, teacher questioning may actually limit inquiry and mitigate against a process of exploration. Dantonio & Beisenherz (2001, p. 23) observe: "Classroom teachers persist in asking

lower-level, recall-oriented questions, requiring students to do little reflective, creative or critical thinking". Significant to this study is the observation that most teachers are unaware of ways in which their classroom practices legitimate the asymmetry of knowledge production, rather than following a conversational process in which feedback is part of learning practice.

Methodology

The primary aim of this research was to explore the level of classroom questioning between students and teachers, and this was realised through gathering and analysing empirical evidence. A more detailed account of this research, including the 'voices' of respondents, was published in Education and Training (Ozuem & Lancaster, 2015).

A qualitative research strategy was implemented that was suited for examining and meeting our underlying aims and objectives. Understanding questioning between teachers and students requires an in-depth understanding of the context in which learning takes place. By doing this teachers and students form, and are shaped by, their learning environment.

The focus of this study centred on a business department of staff and students and investigated how learning is cultivated within the department. The choice of philosophical orientations in qualitative research is varied. For example, Orlikowski & Baroundi (1991) identified three broad categories of philosophical suppositions in qualitative research: positivism, interpretivism and critical realism.

A researcher with a positivist view believes there is objectivity, and research findings are independent of the researcher. Yang (2006) articulates: "The positivist approach has inevitable limitations to studying a teacher's questioning considering it regards the various purposes of teacher questioning, interaction of teacher and learner, and the individual characteristics of the learner, and reduces the effect of a teacher's questioning into difference of the score between an experimental group and control group." (p. 196). He suggests that under the positivist assumption, questioning can be context-proof, student-proof and teacher-proof, and the type of questioning can be graded into degrees of effectiveness.

This study seeks to understand the level of classroom questioning as it exists in a particular context, and to connect this with an understanding of the context. Interpretivist researchers seek to describe and understand socially constructed realities. They commonly aim to generate socially relative knowledge about some social phenomenon, and often progress by interpreting experience and observation using language-based methods (Ozuem et al., 2008). Qualitative research should be formulated around a particular strategy. Payne & Payne (2004) describe a case study as the detailed study of a single unit: "The social unit is usually located in one physical place, the people making the unit being differentiated from others who are not part of it. In short, the unit has clear boundaries which make it easy to identify." (p. 31). They specify that a case study should have a real life context and the phenomenon of interest should not be divorced from its context. However, there is contention related to the word 'case study' which has resulted in multiple meanings. Myers (2009) argues: "A case study uses empirical evidence from one or more organisations where an attempt is made to study the subject matter in context. Multiple sources of evidence are used, although most of the evidence comes from interviews and document" (p. 76). He specifies three elements which need to be present to some degree for any research to be classified as a case study:

1) Must always involve a firm or organisation;
2) Does not normally involve participant observation or fieldwork;
3) Can be conducted according to positivist, interpretive or critical tenets of what is considered to be 'good research'.

It is crucial to take account of both the social context and immediate discourse context of questions in terms of social meaning. Thus, we must ascertain whether Payne & Payne's definition of case study or Myers' categorisation of three elements of case study (positivism, interpretivism and critical realism) meets the aims of delving into the level of classroom questioning in a complex environment. The basic research strategy for this project involved an interpretivist case study. This strategy was employed based on the nature and the size of the setting. Such a qualitative strategy offers a holistic view of the issue under investigation by providing 'retrospective insights' into the level of classroom questioning within the organisational setting (Denscombe, 2010). The use of a case study strategy is appropriate given this study was an exploratory examination of levels of questioning in a particular organisation.

Observation took place in one department. When asked if they were interested in participating in a small-scale qualitative teaching observation, 12 staff indicated interest. Nine participants were

subsequently invited to discuss permission to audio record all observations. Participants approved on the understanding that recordings would be destroyed two months after analysis of data. Observations were spread over two weeks. The audio recorder helped capture the varied activities during the session. After observations had taken place, one-to-one meetings were carried out with tutors and these lasted around 30 minutes each.

Four focus groups were conducted with students, and four classes were selected. Two of these had previously registered complaints about their tutors' classroom delivery. In terms of the remaining classes, fewer complaints had been received. Denscombe (2010) recommends: "People tend to be chosen deliberately because they have some special contribution to make because they have some unique insight or because of the position they hold" (p. 181).

One group was selected as they had expressed interest in participating in interviews. The other group was selected to provide additional insights and perspectives related to the nature of questioning. The research aims were explained to participating classes and 25 students from two classes subsequently volunteered to participate in an interview. Interview questions were piloted on three students from different institutions. Some questions were reworded either because the concepts were too difficult or answers were not directly related to the theme of the investigation. Participants were given some background to the research and it was made clear that they could withdraw from interviews at any point in time. The number of participants was scaled down to six in each focus group. In all, 24 students participated in four focus group interviews. Participants agreed to be recorded following an assurance to destroy the data later. Six semi-structured themes comprised the broad structure of focus groups and formed the framework for the interviews. Each question was accompanied by some 'prompting questions'. An advantage of this technique is that participants' responses are guided by interviewer questions and respondents are afforded the opportunity to freely express themselves within the areas of the research. Each focus group lasted about 50 minutes.

In terms of validity and reliability Liamputtong (2010) argues: "Qualitative research holds the view that reality is socially constructed by an individual and this socially constructed reality cannot be measured, although can be interpreted" (p. 20). He set out to explore the underlying phenomena using three major qualitative strands of observation, focus group interviews and theoretical reviews. The aim was not to disprove any existing theoretical construct in classroom questioning. These methods accept that the outcomes are not geared towards a 'definitive answer' to any particular set of problems, but to provide useful and valid expositions that contribute to the understanding of an existing problem.

The grouping of these data-collection techniques in small-scale qualitative research gave a richer understanding of the phenomena. This research was centred on finding out the level of questioning and to suggest potential solutions to how questioning can be used to improve tutor and student engagement and understand how questioning is conducted in a particular setting. The underlying rationale for taking this approach in relation to classroom questioning is that these methods facilitate a complete picture of the nature of questioning that exists within a specific educational setting.

Findings

Observations were analysed to look into patterns of questioning and provide a richer understanding of individual knowledge and methods of questioning. A cross-section of respondents' comments was examined in search of patterns and features that justified their knowledge of questioning. Efforts were made to ensure that post-observation interviews focused on issues related to each observation. The last section thematically analysed patterns and features generated from student focus group interviews. The purpose was to answer: What are the connections between good questioning and student learning and achievement? What are tutors' conscious knowledge and beliefs about productive questioning?

Transcripts for teaching observations were provided to participants for validation before proceeding to a synthesis of their perspectives in the study. It is important to understand the variables within which the teaching observations were conducted. Four major variables were employed to assess and monitor the level of questioning and interactions in classes:

(1) Encourages elaboration – open question;
(2) Probe question;
(3) Checks understanding;
(4) Offers encouragement.

Data generated were analysed to identify areas where productive questioning and responses were involved. Observations were recorded based on the occurrence and relationships of the variables. Sometimes, these variables were dependent on one or more variables, thereby occurring simultaneously in the context. To this end, the level of questioning and interaction that exists in classes might be placed in one or more of the related variables. Taken together, two patterns of questioning were focused on probing questions, whilst the remaining teachers focused on checking understanding.

Nine teaching observations were conducted, which were followed by individual interview sessions. The underlying aim was to answer: 'What conscious knowledge and beliefs do tutors hold about productive questioning in their classes?' The focus of interview sessions was to discuss areas for which questioning is productive or not effectively used. While some teachers believed that student success depends on the effectiveness of their teaching, others claimed that the nature of students within the college requires more than effective teaching.

Students with learning orientations can talk themselves through difficulties they face in the learning process. The majority of respondents underlined why teaching remains a one-way process. Learning is traditionally couched in mechanistic and rationalistic models, whereas answers to student questions are a gift from the experts. Asking engaging questions can be spontaneous. However, tutors have to plan the class learning objectives and how they intend to achieve them. Therefore, some questions as well as actual information for the lesson must be prepared before the class. Another way of improving the level of engagement between tutors and students is by having tutors spend time observing their colleagues conducting a lesson. This can allow for open feedback and discussion as well as learning techniques for teaching. Critically aware learners grasp that knowing involves two-way communication. For learners to 'know' something, they must understand it on their own terms; to question how learning is being formed rather than reacting to a monologue. Critically aware learners appreciate that understanding involves dialogue with what one hears when listening to others. A critical learning environment necessitates posing questions for the class and generating issues in response to what is being taught. The dialogue with one's own voice and the myriad of voices within which learning takes place shifts the focus of student learning to the outside world. Asking questions helps generate a clear understanding of making sense of the world. 'Meaning' is not that which can be transferred to students by mono-logic dispositions; rather, it should be a two-way process. Students should be given the opportunity to pose questions and define and clarify complex issues related to understanding the world.

Findings indicated that questioning and dialogue in the classroom imply responsibility of tutors and learners to be actively reflexive in their thinking and challenge taken-for-granted assumptions in the classroom learning environment. Tutors should allow space for learners to ask questions and enough time given to learners to think and digest issues related to questions. Learners need to be motivated to ask questions and be encouraged to get involved in discussions. Teachers should consider 'think-pair share strategy' in their classroom delivery (Tienken et al., 2009, p. 43). After each question, tutors should allow learners time to think about their responses. To this extent, students should be allowed to interact and exchange ideas during classes.

The practice of preparation benefits tutors in posing more productive questions to their learners. Tutors can prepare a list of questions related to past and present lectures prior to their classes which guarantees more time to reflect on the nature of questions to their learners. Contextual data in this study shows that greater numbers of tutors failed to pose productive questions in their classes.

Findings proposed that tutors must take into consideration pedagogic factors like questioning time, questioning strategies and preparation strategies to practically address the needs of the department.

Conclusion

This study examined the level of questioning in a particular department within an institution. Perceptions generated from respondents were only those involved in a particular department. To determine the level of questioning within the institution, a holistic study that could consolidate the perceptions of the entire teaching staff is required. The methodological perspective adopted identified a number of concerns. For example, some respondent observations could not be placed on predetermined variables used in the data-collection technique. The observation schedules were limited to four variables, which did not give any allowance for 'closed questions' in the data-collection process. In any subsequent study, the designing of data-collection techniques should take into consideration other variables, and not be limited to the sort of unstructured and open variables utilised in the current study.

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