

Zimmerman, B.J., 1995, *Self-efficacy and educational development*. In: Bandura, A. *Self efficacy in changing societies*, Cambridge, Cambridge University Press.

By accessing this paper by Zimmerman, my understanding of the position of *self-efficacy* in the discourse of this research project has been enhanced but it has also caused me to reflect and consider re-labelling this complete research project in the light of a new idea. I

believe Zimmerman to have been a student, and perhaps later, a colleague of Bandura's and I think Zimmerman acknowledges the guidance of his mentor in the writing of this paper which is published in a collection edited by Bandura.

The paper has captured my interest because it has introduced a new idea into this research project, that of **academic agency** which is a dimension that I had not previously thought about.

To gently paraphrase Zimmerman's otherwise excellent statement about the meaning of academic agency, it can be thought of as:

- a sense of [academic] purpose, this being a product of self-efficacy and academic confidence that is then the major influence on academic accomplishment.

According to the literature reviewed as this project progresses, there appears to be a persistent debate about conceptual and/or structural overlaps between dimensions of academic confidence, academic self-efficacy and academic self-concept, whilst at the same time many researchers claim to have determined distinct differences that are important to understand. For example in a recent e-mail conversation with Sander (17 July 2015), whose research and papers on academic confidence are very important to this research project, I asked him for his views on these overlaps. His generous reply presented his viewpoint:

*"...efficacy is something tightly specific, my confidence in (i) starting my next assignment at least two weeks before the deadline (ii) reading widely (iii) putting together a detailed, referenced and coherent argument (iv) submitting it on time (v) that it will receive a good grade This process has 6 specific efficacies. In contrast, confidence is more general and relates to my academic studies in general. For the next assignment I might be pressed for time and so just submit something adequate but, in general, I start my work in good time, I read widely, I write appropriate academic arguments, submit the work on time and expect good grades".*

I'm not sure his clarification is convincing enough for me as although I understand his point that efficacy is a dimension of academic agency that might be measurable in the context of specific

domains – which is the meaning I take from his comment that ‘..this process has 6 efficacies, but by combining these efficacies in a summative process and calling the resultant ‘academic confidence’ doesn’t seem to me to generate anything that is distinct. As an analogy: suppose we measure the lengths of 6 matchsticks – we have 6, distinct measurements – but then we put them in a line end-to-end and measure the length of the line of matchsticks – we then only have one measurement but it’s **dimension** is still *length*. On the other hand, in our analogy, should we reverse the measurement process and instead, measure the length of the line of matchsticks, our result would not provide us with any data on the lengths of each individual matchstick. So if academic confidence is a resultant derived from summing domain-specific efficacies, measuring academic confidence will perhaps provide us a useful data point for comparison purposes, it will tell us nothing about its component efficacies. I think by arguing the point in this way I am adding merit to the process of measuring academic (behavioural) confidence distinctly from measuring (self) efficacy, regarding that as one of the components or dimensions of my Locus of Control Profiler in my project.

Zimmerman’s paper is a review of research relating to the *causal or mediational* role of perceived self-efficacy on students’ educational development (p203) which is directly connected to the focus of my research and he crystallizes Bandura’s original thesis into a succinct definition of *perceived academic self-efficacy* as ‘personal judgments of one’s capabilities to organize and execute courses of action to attain designated types of educational performances’ (p203) and reminds us about how Bandura measured three dimensions of academic efficacy:

- level: referring to task complexity;
- generality: relating to the transferability of self-efficacy beliefs across activities, particularly into different academic domains; and
- strength: which is a measure of the degree of *certainty* that a particular [academic] task can be [properly] performed.

These are complex ideas not the least because a) they are pinned on self-judgments and b) they are easily seen to be linked to different domains of functioning within the academic context. For example, an individual may have substantially different judgments about their academic self-efficacy in approaching tasks in mathematics compared with tackling english or other written academic challenges, and according to Zimmerman at least, c) they are context-dependent and

he cites the example of an individual who may exhibit different self-efficacy beliefs when working in a *competitive* learning environment compared with a co-operative one.

But there are two significant other factors that would appear to impact on these judgments: mastery experience and vicarious experience although in my previous function of teaching mathematics even these two dimensions exhibit overlap characteristics when viewed in the same learning environment. For example, a student may make a judgment about how well they will be able to complete a maths task based on both a level of certainty that stems from prior experience of successfully solving similar problems (mastery) but tempered with a sense of how well they will be able to solve the problem in relation to their judgments of their abilities in relation to that of their peers – that is, vicariousness.

Taking this last point forward, Zimmerman also tells us that individuals' sense of their efficacy is impacted upon by comparisons with their peers and that this is especially true in educational environments, citing earlier work by Brown & Inouye (1978) – doubly interesting as it uses learned helplessness as the evaluative model – which studied students' perceived similarities in competence when judged against a peer model situation. The key point that emerged was that students with a strong sense of self-efficacy base this more on mastery experience rather than vicarious experience, whereas the converse would be true for those with a weak sense of self-efficacy (and which leans towards learned helplessness).

The contribution of other researchers' studies can be noted here: Ferla et al (2009) looked at academic self-efficacy and academic self-concept in the domain of mathematics reporting that these represent 'conceptually and empirically different constructs' (p502), further suggesting that because academic self-concept (ASC) is rooted in past experiences whilst academic self-efficacy (ASE) is related to judgments about *future* performance, this means that ASC has a strong influence on ASE which only works this way round. Ferla's work supported an earlier study by Bong & Skaalvik (2003) which although promoted the idea that both constructs share many similarities – indeed so much so that literature often regard them as analagous constructs because both can work as predictors of motivation, learning-related emotion and academic performance (and by implication, academic achievement) – nevertheless concluded that the differences between the constructs were important to understand and tease out, citing specific comparative components that stand at either end of dimensional spectra:

- integration <-> separation of cognition and affect;
- heavily normative <-> goal-referenced evaluation of competence;

- aggregated <-> context-specific judgment;
- hierarchical <-> unstratified structure (in learning contexts?);
- past <-> future orientation (with regard to approaches to learning?);
- relative temporal stability <-> malleability (p499).

Both Bong & Skaalvik's and Ferla's papers are presented some time after Zimmerman's paper that is reviewed here and although neither cite Zimmerman's as one of their sources, both draw on several of his other studies and of course their studies draw on Bandura's earlier, fundamental ideas. Bong & Skaalvik's paper is lengthy and important and will be reviewed in a subsequent post.

So to conclude the review of the earlier section of Zimmerman's paper, the bulleted list below reports some further key points of note:

- self-approval of efficacy is strongly influenced by social comparisons => social *stigma* associated with disability labels in a learning context is likely to negatively impact on efficacy beliefs because learning differences are perceived in peer-comparative context;
- Multon, Brown & Lent (1991) presented a meta-analysis based on 38 research papers looking for linkages between self-efficacy and academic achievement from a variety of criteria. Their analysis revealed that self-efficacy accounted for 14% of the variance in students' academic performance across a variety of student samples;

In the next section Zimmerman speaks of 'self-efficacy and academic *effect*' and by this, is relating students' efficacy beliefs about managing their studies to their emotional states such as stress, anxiety, depression in addition to the influences of self-efficacy beliefs on motivation and academic achievement, and in the subsequent section looks at comparisons between self-efficacy with other constructs. This is interesting and connects to my research design because the Locus of Control Profiler that I will develop uses 'Anxiety, Regulation and Motivation' and 'Learning Related Emotions' as two of the 6 constructs that the profiler is attempting to measure (the other 4 being: 'Self-Efficacy', 'Self Esteem', 'Learned Helplessness' and 'Procrastination'). In Zimmerman's paper, these particular points are of note:

- there is evidence that students' performance in academically threatening situations depends more on efficacy beliefs than anxiety arousal;
- a low sense of efficacy arouses anxiety rather than the other way around;

- ‘educators should focus on fostering a sense of personal efficacy rather than providing palliatives for scholastic anxiety’ – which raises the question in my own mind about whether ‘palliatives’ <=> ‘(learning) support’ ?
- a short section looks at the relationship of attribution theory to self-efficacy beliefs influenced by prior accomplishments, citing various studies where one interesting point emerges: that students with high self-efficacy beliefs attribute failure to a lack of effort whereas students with low self-efficacy beliefs attribute failure to a lack of ability. It will be important to pick this point up in relation to students exhibiting a dyslexic profile where it many studies report that students with dyslexia consistently present self-perceptions of lower academic ability than their non-dyslexic peers with some studies reporting that this may be related to their labelling as having learning difficulties (eg: Banks & Wolfson, 2008)

In a later, short section, Zimmerman draws our attention to the connections between the construct of ‘perceived control’, citing the seminal work of Rotter in the sixties on Locus of Control, and efficacy beliefs. In particular, he refers to research by Skinner, Wellborn & Connell (1990) who teased out differences between ‘control beliefs’ for producing an outcome, ‘means-end strategy beliefs’ and ‘**agency** beliefs’ about possessing the appropriate means-beliefs. Their conclusion is that:

*“In order to be motivated to achieve, students must believe that: a) certain means are effective; b) they possess the means, and c) they can control the desired outcomes [and that] self-efficacy is most closely allied to agency beliefs” (p217 in Bandura (1995))*

As a concluding remark to the complete paper Zimmerman tells us that ‘students’ improvement in perceived efficacy and self-regulation cannot be implemented unless there is greater flexibility in the curriculum’ but doesn’t detail what *kind* of flexibility is desirable. My thoughts are about whether this flexibility might be achieved by accommodating a greater range of student learning processes – which we could say may be demonstrated through designing individual learning programmes that are geared to individuals’ preferred learning processes – or perhaps otherwise through the incorporation of a greater range of subject-content delivery mediums that permit students to access their curricula in their preferred way – or in some kind of *blended* approach to the student learning experience at university?

In reflecting on what has been learned by reading through this paper, I am minded to reframe my research project slightly to account for my fresh understanding about **academic agency** in the light of my constructed interpretation of Zimmerman's definition.

**ACADEMIC AGENCY is a sense of academic purpose, being a product of [academic] self-efficacy and academic [behavioural] confidence that is then the major influence on academic accomplishment.**

I have learned that although academic self-efficacy and academic confidence are distinct constructs they are closely related and therefore that to focus on one as the most important dimension that I am interested in linking to dyslexia rather than the other, perhaps confines the sense of purpose of this research project too closely. I should therefore consider adjusting the focus of the project to be an investigation of the linkages between dyslexia and *academic agency*, with academic behavioural confidence as my key evaluator but I will reflect on this further.

In the meantime, reading this paper did cause me to reflect on the inter-relationships between the three factors of academic agency, level of academic support (learning development) and dyslexia in university contexts, raising the following interesting questions and points:

- is **learned helplessness** at the negative extremity of an '**academic agency scale**', and if so, what would we label the positive extremity?
- if 'level of academic support' can be quantified – for example, by the number of interactions a student may have with a learning development tutor throughout the course of the student tackling a particular assignment – could this be plotted against their 'level of academic agency' in some meaningful way that provides a visual interpretation of a possible correlation between these variables?
- could these two variables further compared with a 'level of dyslexia'? or rather, their position on the spectrum of attributes that are aligned with a dyslexic profile? How would this spectrum accommodate both the negative and positive attributes of the dyslexic profile that directly impact on engagement with the academic curriculum?

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