**Motivation**

The text below is a slightly edited extract from the paper: *Mulligan, Peter and Mac an Bhaird, Ciarán. “Motivating Mature Students of Mathematics.” MSOR connections 15 (2017): 36-43.*

Motivation may be defined as “…a force that energizes and directs behaviour toward a goal” (Eggen & Kauchak, 1994: p.427) and is often categorised as either extrinsic or intrinsic (Merriam & Bierema, 2013). Extrinsic motivation is “…motivation that occurs from reinforcers, feedback, or rewards that are not inherent in the activity itself” (Good & Brophy, 1995: p.402). The person is often not interested in the task, but rather is concerned with what they can gain by doing it. On the other hand, intrinsic motivation is an individual’s own natural tendency to want to seek out solutions to problems. “The “reward” for engaging with the task lies in the pleasure and sense of satisfaction that are inherent in engagement itself” (Anderman & Anderman, 2010: p.30). We should nurture intrinsic drive in our pupils; however, this can also be supported by extrinsic influences. We will now examine different approaches to extrinsic and intrinsic motivation and consider how they complement each other.

Behavioural approaches to motivation (extrinsic) are centred on the ideas of positive and negative reinforcement. From an educational perspective, the aim is to encourage a particular behaviour or attitude in students using these reinforcers. The idea is that “All of the infinite variety of human behaviour can be made more or less frequent or probable by the use or non-use of reinforcement, contingent on some response” (Gage & Berliner, 1992: p.231).

There are a number of common methods used in the classroom to bring about behavioural modification. Sometimes we offer simple rewards or punishments/sanctions in order to promote hard work or good behaviour. In particular, praise (Biehler & Snowman, 1997) and constructive feedback can be a powerful tool in encouraging students to work. This recognition can make a pupil feel good about themselves and encourage them to keep working and engaging in class. The quality of feedback that students receive impacts their self-confidence (Capel & Gervis, 2005).

Some researchers argue that the use of reinforcers can negatively impact on the intrinsic motivation to learn (Eggen & Kauchak, 1994) and the student is simply trying to impress a teacher rather than having a desire to solve a problem. However, Jordan et al (2008: p.34) argue that “Behaviourism is not totally antagonistic to other theories of learning; rather it can co-exist with later learning theories that focus on cognition or the social acquisition of meaning.”

Social approaches to motivation (extrinsic) are concerned with the impact on motivation that may be obtained from the social interactions of students with their teachers, peers, etc. The teacher should be an individual who is “…warm, understanding, friendly, responsible, systematic, imaginative and enthusiastic…” (Fontana, 1995: p.384). Indeed “A student who identifies with and admires a teacher of a particular subject may work hard partly to please the admired individual and partly to try becoming like that individual” (Biehler & Snowman, 1997: p.400). For this reason, the educator should aim to foster a mutual respect between the students and teacher in order to create an environment where learning can take place.

Peers are another key social motivator in the learning experience. It is natural that an individual finds a social group that shares similar thoughts, opinions and beliefs as themselves. “Students learn together in class, while friends, classmates and study partners learn together outside of college campus” (Lei, 2010: p.156). If the peer group places a high value on academic success, then it is likely that the individual will aim to conform to this ethos. These social groups can have a positive effect on an individual as they can be a wonderful source of intellectual as well as emotional support.

The humanistic approach to motivation (intrinsic) “stresses students’ capacity for personal growth, freedom to choose their destiny, and positive qualities” (Santrock, 2009: p.461). One key ingredient of this humanistic approach is the development of self-efficacy. “In general, self-efficacy is a person’s self-constructed judgement about his or her ability to execute certain behaviours or reach certain goals” (Ormrod, 2008: p.356). The psychologist Albert Bandura identified the following four factors that affect self-efficacy:

Mastery Experience:

“Successes build a robust belief in one’s personal efficacy” (Bandura, 1998: p.624). If a pupil has previously succeeded in a similar task or subject area, they are more inclined to approach new material with a degree of enthusiasm and confidence. It is important that challenges posed to students are appropriate for their learning level. If the task is too simple, while the student may receive an immediate increase in self-efficacy, it will not teach them perseverance for more difficult problems or situations.

Vicarious Experiences:

Bandura (1998: p.626) states that “Seeing people similar to oneself succeed by sustained effort raises observers’ beliefs that they too possess the capabilities to master comparable activities to succeed.” For example, if a pupil has reservations about whether or not they can solve a mathematics problem, one might reassure them by illustrating how students in the past have had similar concerns but were in fact successful at completing the task.

Verbal Persuasion:

Bandura (1998: p.626) explains that “People who are persuaded verbally that they possess the capabilities to master given activities are likely to mobilize greater effort and sustain it than if they harbour self-doubts and dwell on personal deficiencies when problems arise.” Praise can boost a student’s self-efficacy and contribute to that internal feeling that they can succeed. Educators must make a conscious effort to explicitly identify, for the sake of the pupil, how they have excelled in a particular area, be it an academic subject or an extra-curricular activity. Goals set by both the educator and the student must be achievable.

Physiological State:

How a human interprets their physiological reactions to situations, determines whether they get a boost to their self-efficacy or not. For example, as part of a project, a student may have to give a class presentation. Some pupils may have feelings of anxiety around facing their classmates. “They interpret their stress reactions and tension as signs of inefficacy” (Bandura, 1998: p.626). Depending on the learner’s level of self-confidence, they may either embrace the challenge or shy away from the task. It is therefore vital that teachers do all in their power to control situations like this to ensure a positive outcome.

The cognitive approach is another intrinsic source of motivation. From this viewpoint, people are seen as having a desire to seek out solutions to problems. They have a natural curiosity and when a topic is personally relevant, they require little incentive to pursue an answer. It is important that the teacher, when planning a lesson, makes the material as relevant as possible for the students. With reference to mature students, Knowles (2012: p.257) argues that we should “…use the existing knowledge experience and motivation of learners to shape the learning experience.”

One approach is to use inquiry based learning. “Inquiry-based education is a learner-centered form of teaching and learning that enables students to tailor at least some of their learning experiences to their own interests and curiosity” (Saunders et al, 2012: p.17). The teacher assumes the role of a facilitator rather than a source of information and the class can be divided into groups because

…the shared responsibility and interaction produce more positive feelings toward tasks and others, generate better intergroup relations and result in better self-images for students with histories of poor achievement (Joyce et al, 1997: p.89).

This approach encourages the pupils to ponder higher order questions and not shy away from challenges.